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ABSTRACT

Purposes of this study included constructing a self-administered measure of bias in sex role stereotypes and developing a self-intervention, self-confrontation manual to reduce the impact of these stereotypes on career choices. One hundred six items, representative of thirty-two stereotypes, were administered to 154-item tryout participants. A study was conducted to determine if the intervention manual reduced bias as measured by the survey. An experimental comparison group, time series design was used. Two hundred three volunteers were assigned randomly to an experimental or control group. Both groups were pretested and posttested with the survey. Only the experimental group received the treatment. Although the two groups performed about equally on the pretest, the experimental group's posttest bias scores were significantly lower. The differences were greater for males. On the pretest, males in each group were significantly more biased than females. On the posttest, there were no significant sex differences in the experimental group, but control males scored significantly higher than control females. The data generally supported the conclusion that the intervention strategy worked for this sample. Suggestions included constructing additional activities related to male stereotypes and adapting the materials for use by persons other than educators. (Author/LRA)

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Final Report

Project No. 498AH70125
Grant No. G007701967

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MODIFYING ATTITUDES TOWARD SEX STEREOTYPES IN VOCATIONAL EDUCATION (MASSIVE)

May 1979

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

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May 29, 1979

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ABSTRACT

Modifying Attitudes Toward Sex Stereotypes
In Vocational Education (MASSIVE)

Purposes of this research included constructing a self-administered measure of bias in sex role stereotypes and developing a self-intervention, self-confrontation manual to reduce the impact of these stereotypes on career choices.

One hundred six items, representative of thirty-two stereotypes, were administered to 154 item tryout participants. The final survey (sixty items - thirty stereotypes), including five "bias" and an "equality" scale, has high internal consistency and test-retest stability.

A study was conducted to determine if the intervention manual reduced bias as measured by the survey. An experimental comparison group, time series design was used. Two hundred three volunteers were assigned randomly to an experimental or control group. Both groups were pretested and posttested with the survey. Only the experimental group received the treatment.

Although the two groups performed about equally on the pretest, the experimental group's posttest bias scores were significantly lower. The differences were greater for males. On the pretest, males in each group were significantly more biased than females. On the posttest, there were no significant sex differences ($p>.05$) in the experimental group, but control males scored significantly higher than control females ($p<.001$).

The data generally supported the conclusion that the intervention strategy worked for this sample. Suggestions included: constructing additional activities related to male stereotypes and adapting the materials for use by persons other than educators.

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PREFACE

Project MASSIVE materials were developed to provide a self-assessment survey and self-intervention strategies which reduce career barriers resulting from sex role stereotyping. The strategies are designed to confront educators with information and exercises which can change their attitudes and behaviors that are restrictive in nature. The survey provides a reliable assessment of two factors: bias and general philosophical equality.

Many persons have participated in these endeavors. We wish to express our deep appreciation to Dr. Raymond A. Wasil, Director, Division of Guidance and Testing, and to other staff members of the Division who have offered so many helpful suggestions. We owe a special debt of gratitude to: the ad hoc committee members; Dr. Byrl Shoemaker and the staff of the Division of Vocational Education; Harry Wolford and the staff of the Division of Computer Services and Statistical Reports; Dr. Franklin B. Walter, Superintendent of Public Instruction; Dr. Pat E. Crisci, Assistant Superintendent of Public Instruction; Dr. H. Eugene Wysong who developed the manual; and those hundreds of educators who participated in some phase.

In addition special thanks go to June Harber, Gayle Kitchton, Phyllis Reid, and several teachers and students at Franklin Heights High School, Columbus, who typed the various products and reports.

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CHAPTER I

INTRODUCTION

Rosenthal and Jacobsen's (1968) landmark publication, Pygmalion in the Classroom, concluded that teacher expectations of student ability have a significant influence upon a child's classroom learning and subsequent test performance. Attempts at replication were numerous. Some of the replications were failures (e.g., Claiborn, 1969; Fleming and Anttonen, 1970; and Wilkins and Glock, 1973). Other researchers suggested a need for refinement in procedures or in the expectancy hypothesis (e.g., Cornbleth, David and Button, 1974; Good, 1970; and Jeter, 1972). In a review of earlier work, Braun (1976, p. 189) concluded, "The expectation phenomenon has a logical basis both psychologically and philosophically in spite of its elusive nature experimentally."

A part of the expectancy hypothesis has to do with the impact of the expectations of one person on the self-image and behavior of another. During their adolescent years, youth test the reality of a hypothesized self in areas involving peer relationships, the physical self, relationships with significant adults, the perception of role, career choice, and academic learning, to name only a few. It is clear from the work of Horrocks (1969), Piaget (Flavell, 1963), and others that the total self-concept is still being developed during the adolescent years. Researchers suggest that the self-image is developed in part through interactions with significant adults (Horrocks, 1969). It is also well established that the self-concept mediates most other aspects of interaction with the environment (Roger, 1951; Horrocks, 1969; Lindgren, 1956). This mediation of the self-concept may explain in part the findings of expectancy bias and self-fulfilling prophecies.

In an effort to help educators see how their expectations can affect the self-concept of the student and to prevent these from becoming self-fulfilling prophecies, an intervention strategy was planned. The conceptual approach adopted for the intervention strategy was an adaptation of self-confrontation methods reviewed by Fuller and Manning (1973) and those proposed by Rokeach and McLellan (1972) and Rokeach (1973).

Expectations may be based upon stereotypes. That is, one may apply generalizations about the "typical" individual in the group to every person in the group and expect all to perform or behave

the same. It is that practice which this research attempts to reduce.

The problem of stereotyping, including sex role stereotyping as addressed in this research, may have been illustrated best by Allport (1962) as quoted by Henry Clay Smith (1966):

> One marvels, for example, at the correctness with which insurance companies predict the number of deaths that will occur by highway accidents, from cancer or from suicide. The chances of a hypothetical average man for survival or death are all the insurance business wants to know. Whether Bill himself will be one of the fatal cases it cannot tell--and that is what Bill wants to know.... (p. 153)

The situation of "Bill" is analogous to a teacher's expectation that a female enrolled in a traditionally male secondary school vocational program will not survive (that is, graduate). Using the insurance company approach, the teacher or counselor can predict that the typical, successful graduate from vocational agriculture next year will be an eighteen-year-old male. Such group information may be helpful at the institution level but does it help in recruiting, instructing, evaluating and placing in jobs the "Judys" and "Marias" who constitute about ten (10) percent of all those enrolled in the program? Educators who believe that females do not belong in a class, that females are hard to place on jobs, or that females drop out of certain programs after only a short time always offer a mass of empirical support for their view. If those same educators use this empirical support in counseling prospective nontraditional applicants and in placing these applicants in classes, those students who insist on the nontraditional choice would be subject to the negative effects of the self-fulfilling prophecy syndrome.

The problem addressed in this research then is rooted in how the choices and achievement of vocational education students enrolled in nontraditional (according to existing sex role stereotypes) secondary school programs may be hindered by a negative self-concept created in part by the expectancy bias of the teacher, administrator and/or counselor. One can legislate that vocational education will provide open enrollment and equal opportunity for both sexes in all service areas and taxonomies. One cannot,

however, legislate a change in attitude toward the "place of people" in the world of work or against resulting expectations such as (1) females will not or cannot perform as well as males on certain tasks and (2) male graduates in certain vocational programs will be impossible to place in jobs in their field. Since adolescents are still developing self-concepts, these expectations may well become self-fulfilling so that subtle sex discrimination is perpetuated.

This research addresses the need for materials to help educators lessen the impact of their sex role stereotypes on the student's vocational choice and achievement in vocational programs. The need for two types of materials was met in this study: a refined assessment of attitudes and behaviors which restrict student choices and create barriers to achievement; and materials designed for self-confrontation, self-intervention and improvement.

The materials developed in this study were not, therefore, designed to change the whole fabric of society, but only to replace two or three threads so that the pattern will be different. The research design was established to provide feedback on whether or not the new threads had made a difference in the pattern, not on whether or not the total picture of society was changed.

The scope of the project was limited to determining whether or not stereotyped expectations and the resulting behaviors of vocational educators could be changed as a result of the self-confrontation, self-intervention materials. We assumed that this process could be used most effectively by individuals who have a concern that their attitudes and behaviors may limit the success of students. Since the number of students enrolled in any non-traditional program is very small, an evaluation design based upon students was impractical. The objectives of the project and the evaluation design were directed, therefore, to teachers, counselors and administrators.

The project was developed and managed in terms of the following objectives:

1. Define and delimit expectations and behaviors of educators which perpetuate sex discrimination in vocational education.

2. Develop and validate a reliable self-administered instrument for use by educators in uncovering internal inconsistencies in beliefs related to sex role stereotyping and sex discrimination.

3. Develop and validate a self-intervention manual designed for confronting one with inconsistencies in beliefs and initiating changes in expectations and behaviors.

4. Evaluate quantitatively and qualitatively the products and process.

5. Disseminate the process and products for use in preservice and staff development in Ohio and across the country.

The project effort was oriented toward eleven major tasks, each of which will be described further in the next section:

1. Define the instrument (hereafter called survey) specifications.

2. Search for items which fit the parameters defined in the first task.

3. Write other items to meet the overall table of specifications.

4. Administer items to a "Tryout" population and use the results to build the final survey form.

5. Select three random samples (experimental, control, and replacement pool) of vocational teachers, counselors, and administrators in Ohio.

6. Develop and refine the intervention manual which will include focusing techniques and self-confrontation exercises designed to change expectations and behaviors.

7. Field test the survey and manual together for the purpose of revising the manual.

8. Administer the pretest survey to all members of the two groups, experimental and control.

9. Administer the intervention manual only to the experimental group.

10. Administer the posttest survey (same instrument) to all members of both groups and evaluate the results.

11. Disseminate the survey, manual, and report to Ohio schools, to the U.S. Office of Education, to the other state departments of education, and to selected professional organizations.

The remainder of this project report is designed to describe in more detail what methods were employed and why they were used to accomplish the tasks, the results of the evaluation, and the conclusions and recommendations made by the investigators. The raw data from various segments of the study are included in Appendix D in the event that other investigators wish to re-analyze the data.

CHAPTER II

PROCEDURES

This section is organized around the eleven (11) project tasks listed in the previous chapter. The procedures associated with each task are described and those related specifically to the research design are summarized in the part of this chapter labelled Evaluation Methods.

Defining Survey Specifications

After an extensive review of the literature, tentative lists of stereotypical behaviors and attitudes were developed. One list showed the stereotypical male while the other illustrated the stereotypical female. These stereotypes were assigned to one of five major classifications: physical attributes, emotional or life style, aptitude, academic or school ability, and concepts of the world of work.

An ad hoc committee including teachers, counselors, administrators, students enrolled in nontraditional programs, and business and industry personnel officers was convened to examine the list of stereotypes and to suggest a structure for the survey. (See Appendix A, part 1 for a list of the committee members.) The refined lists of stereotypes are included in Appendix A, part 2. The committee recommended that the specifications for the survey be developed around dimensions on which males and females are perceived differently. The five major headings (e.g., physical attributes) were left intact, but several members suggested that another section dealing specifically with occupational expectations be added. The form which was used to solicit reactions and suggestions from the committee in this first meeting is included in Appendix A, part 3.

As a result of the input from the committee, a list was devised of thirty-one bipolar dimensions (e.g., active-passive) plus a miscellaneous vocational choice area. These thirty-two areas reflected most of the stereotypes from the original list. In several workshops, participants were asked to describe the "average" male and female in terms of each dimension and later to describe the "ideal" male and female on the same dimensions (see Appendix A, part 4). This exercise was completed in order to determine which dimensions should be used for survey item writing. For a dimension to be

isolated as one containing serious sex role stereotypes, there should be a sharp difference between how the "average" male and female roles were perceived by the participants, but little or no difference in how they perceived the "ideal" male and female roles.

Searching for Items

An extensive review of the literature, including the ERIC file, was conducted to find items which could be used as models for item writers. After a study of the existing pool of survey items, the decision was made to use statements containing stereotypes about males and/or females for which the respondent would mark a Likert scale choice, one of five points from strongly agree to strongly disagree. Although items from the literature provided ideas on how to phrase certain content, no such items were actually included in the final survey.

Writing, Reviewing, and Revising Items

The thirty-one dimensions and one area (e.g., dominant - submissive, physically strong - physically weak, and the vocational choice area) were used as the content specifications for the items. Many statements were written about each dimension. The items were written also to reflect a range from very low bias to very high bias. From the pool of items, two hundred sixty-six were selected for review. These items were broadly representative of both the content specifications and the different degrees of bias.

The ad hoc committee was convened again to complete the following assignments:

1. Classify each item according to the major categories which had been revised to include: treatment of the sexes, interpersonal relationships, preferences for jobs, characteristics and differences of people, and miscellaneous.

2. Rate each item on a nine-point bias continuum.

3. Make suggestions for adding, deleting, revising, or reclassifying items.

Each item was examined critically by the members working independently, then discussed and, based on a group consensus, was included, revised, or discarded.

Once the work of the committee was completed, each surviving item was classified according to the thirty-one content dimensions and one area. The average bias rating (one to nine) for each item was calculated. Only those statements which were rated unanimously as high (7.0 or higher) or low (2.0 or lower) in bias were selected for further study. One hundred six items of the original two hundred sixty-six were selected for use in the Item Tryout Phase. Each of the thirty-one content dimensions and one area was represented by as few as two or as many as fifteen items. See Figure 1 below for a list of dimensions and number of items assigned to each.

Figure 1

Number of Items for Each Content Dimension

Content Dimension/Area	Number of Items	Content Dimension/Area	Number of Items
Indoors - Outdoors	2	Good - Poor Finger/Manual Dexterity	3
Passive - Active	3	Good - Poor Artistic Ability	2
Physically Weak - Strong	4	Imaginative - Unimaginative	3
Dependent - Independent	3	Good - Poor Communication Skills	2
Submissive - Dominant	4	Afraid - Courageous	2
Poor - Good Mechanical Ability	3	Unsure - Confident	3
Poor - Good Spatial Ability	2	Poor - Good Math/Science Ability	2
Covert - Overt	3	Follower - Leader	2
Subtle - Obvious	3	Avocation - Vocation	3
Graceful - Clumsy	2	Unstable - Stable Employee	3
Well Behaved - Boisterous	2	First - Second Income	2
Sensitive - Insensitive	3	Homemaker - Wage Earner	6
Caring - Uncaring	4	Concern - Unconcern for Appearance	2
Subjective - Objective	3	Education Wasted - Needed	2
Emotional - Unemotional	5	Talkative - Silent	3
Illogical - Logical	5	Miscellaneous Vocational Choice	15

Administering Tryout Form and Constructing Final Survey

Three joint vocational school districts and three career centers were contacted for participants in the Item Tryout Phase. For each of the joint vocational schools, one project staff member attended a faculty meeting and administered the survey (for a sample, see Appendix B). For the career centers, an administrator at the local school distributed and collected the materials. A total of 96 males and 58 females returned completed surveys and some of the respondents provided comments or suggested revisions.

The responses to the one hundred six items were analyzed and the following calculations were made by sex and for the total group:

item means and standard deviations, content dimension means and standard deviations, item intercorrelations, and content dimensions intercorrelations. In addition the number and percent choosing each of the five responses were tabulated for each item by sex and for the total group. Items for which nearly one hundred percent of the participants gave the same response were deleted or revised. Finally the matrices of intercorrelations were subjected to an adaptation of the principal components factor analysis with varimax and hierarchial rotations. This program was written by Robert Wherry, Sr. and Robert Wherry, Jr. for use by students and faculty in the Psychology Department at The Ohio State University.

Concurrently with the data collection and analysis for this phase of the project, the staff reanalyzed the content of the items and the dimensions and designed the specifications for the survey. Thirty of the original thirty-two dimensions seemed to relate well to sex role stereotypes which could restrict students' choices. The graceful-clumsy and boisterous-well behaved dimensions were eliminated because the empirical data did not support them.

The five categories (see page 7, item 1) which had been used by the ad hoc committee to review items did not work well. Too many items fit more than one category and the categories did not relate directly to the remaining thirty content dimensions.

The thirty dimensions were clustered into six groups which contained items with "high" bias and one group which contained items with "low" bias. Figure 2 on page 10 shows the groupings. These clusters were formed using a priori content descriptions, but they were then tested empirically against the item intercorrelation data available from the Item Tryouts.

Figure 2

Classification of Bias Dimensions After Item Tryout

Group 1

Dependent - Independent
Subjective - Objective
Emotional - Unemotional
Illogical - Logical
Follower - Leader
Unstable - Stable
Talkative - Silent

Group 2

Avocation - Vocation
Second Income - First Income
Consumer - Wage Earner
Concern - Unconcern for Appearance
Education Unnecessary - Necessary
Miscellaneous Vocational Choice

Group 3

Weak - Strong
Sensitive - Unsensitive
Caring - Uncaring
Artistic - Inartistic
Imaginative - Unimaginative

Group 4

Covert - Overt
Subtle - Obvious
Afraid - Courageous
Unsure - Confident

Group 5

Indoors - Outdoors
Passive - Active
Submissive - Dominant

Group 6

Mechanical Ability
Spatial Ability
Manual Ability
School Ability
(combination of Science/Math and Communications Skills)

Group 7

Philosophical Equality
(low bias)

Four parameters for survey development were then established:

1. Items in a group should be correlated higher with each other than with items in other groups.

2. Items in the first six groups should have generally higher means and standard deviations than those in the seventh group.

3. At least one item for each of the thirty content dimensions should be included.

4. The final survey should comprise no more than sixty items. The number was set at sixty, instead of thirty as suggested in the original proposal, because better coverage of the thirty content areas was possible and timing studies showed that the average teacher could complete the sixty items in about ten minutes.

Once the sixty items were selected and assigned to one of the seven groups (or scales), the responses for just those items were analyzed again through the Wherry-Wherry factor analytic program. The intercorrelations among these items would, of course, be exactly the same as in the original analyses, but the factor matrix for each group could be very different from the analyses based on the original one hundred six items. In addition intercorrelation matrices of the seven scales were prepared and analyzed.

These sixty items, after only minor revision during the Field Test Phase, became the final survey instrument used in the Pretest and Posttest Phases of the research.

Selecting the Sample

Three independent random samples of two hundred each were drawn from the total pool of vocational teachers, counselors, and teacher educators in the state for participation in the fall pretest. One sample was called experimental, another was called control, and the third was called replacement pool. Each prospective participant was sent an invitation letter cosigned by the Executive Director of the Division of Vocational Education and the Director of Guidance and Testing. Two hundred fifty-eight of the six hundred responded affirmatively.

A decision was made to assign the replacement pool "volunteers" randomly to one of the other two groups as cards were received. Using this method, the two groups were balanced so that approximately one hundred thirty were in each of the two groups: the experimental and the control.

In the spring of 1978, participants were sent a letter confirming their participation and explaining precisely what they would be asked to do. The letter for the control group was different from that of the experimental group. A second letter was sent in the autumn of 1978 to remind all participants of their commitment and to suggest a timeline for their participation.

The original proposal called for stratified random samples, but this procedure was revised for several reasons including the following:

1. Although some information, for example sex and vocational program, was available, the data source was not organized by these categories. The computer programming required for sorting educators according to the salient variables before sampling would have been extensive.

2. The samples were adequate in size to ensure participants of all types and from all vocational programs. Three times the total number needed in the project were invited.

The decision to do simple random sampling across the total pool was made, therefore, because the stratified plan did not seem worth the extra time and expense.

Developing and Revising the Intervention Manual

The grantee organization contracted with Dr. H. Eugene Wysong, Professor of Education at the University of Toledo, to draft an intervention manual according to the following specifications:

1. Employ self-confrontation exercises using the survey responses to point up discrepancies in attitudes and behaviors compared to general philosophical beliefs. For example, a respondent could strongly agree that all people should receive equal pay for equal work but contradict that with other attitudes or behaviors.

2. Use focusing techniques to call attention to a cluster of items, not to sex stereotyping in general, because research has shown that such a "rifled" approach is much more likely to be successful in modifying attitudes than is a "scattergun" approach.

3. Devise remedial activities related directly to each cluster of items so that users can target their activities.

4. Include a scoring "key" for the survey items so that the entire process can be completed in the privacy of one's home or office.

5. Use an approach which will be stimulating and motivating as well as instructive.

The consultant developed a first draft of the manual which was critiqued by the project staff. The ad hoc committee was then convened in order for the members to review the manual and make suggestions. Copies of these suggestions and the critiques by the project staff were given to Dr. Wysong who completed a second draft. During this stage of development and revision of the manual, two scales of the survey were combined, resulting in five "high" bias scales and one "low" bias scale. These were named as a result of an extensive content analysis. The scale names and the numbers associated with each are shown in Figure 3 below. These are the names used in the final instrument.

Figure 3

Final Survey Scales and Number of Items

Scale Number and Name	Number of Items
1. Level of Employment and Decision-Making Responsibilities	14
2. Importance or Purpose of Employment	8
3. Type of Employment	14
4. How Well Individuals Function in a Work Setting	11
5. An Individual's Basic Abilities	7
6. Beliefs About What Should Exist	6

This revised draft of the manual and the survey were used in the Field Test Phase described below. Concurrently with the Field Test, Dr. Wysong gave the manual and survey to a class of graduate students in career guidance for their reactions. Their

suggestions were used together with the Field Test results to complete a third draft of the intervention strategies. A fourth edition was prepared by the consultant using comments from various workshop groups. After some editing by the staff and revision of one activity the final version was completed for use with the experimental group during November and December of the 1978-1979 school year.

The work of this phase was viewed as the most critical to the success of the project. Whether or not attitudes and behaviors related to sex role stereotypes could be changed through self-confrontation exercises would be determined largely through the efforts in this phase. Great care was taken, therefore, in weighing each sentence in each activity and in judging the impact on the user. Many ideas were solicited, but not all were used because some ideas would have led us away from the major specifications cited above. All revisions were made in terms of those original parameters.

Conducting the Field Test

The purposes of the Field Test Phase were to provide feedback on: the manual, the survey, the process, and to gather empirical data to show if the manual fulfilled its objective (namely, to change attitudes measured by the survey). Participants of the Field Test included members of two summer institutes for vocational guidance and members of one graduate class in career education at the University of Toledo, a total of approximately seventy vocational educators representing teachers, counselors and administrators. The participants in this phase were excluded from the fall Pretest Phase.

Each person responded to the survey in a group setting. After the pretest answer sheets were collected, the intervention manuals (field test edition), evaluation sheets and second answer sheets were distributed. Participants were instructed to complete the manuals immediately and respond to the survey a second time on the last day of the institute. They were also asked to evaluate the products and process on the form included in Appendix C. All materials were collected on the last day of the workshops.

Evaluative comments were used to make minor word changes in the survey. In addition, suggestions for the manual were submitted to the consultant for inclusion in the revision.

Conducting the Pretest Phase

The sixty-item survey, a sheet of directions (see Appendix D), and a standard NCS machine-scorable answer document were sent to each of the two hundred fifty-eight volunteers. Each answer document was precoded with a unique number to ensure that the pretest sheets could be matched with the proper posttest sheets.

After two follow-up letters, two hundred eleven (82 percent) completed answer sheets were returned for scoring. Ninety-six were members of the experimental group and one hundred fifteen were in the control group.

Answer documents were scanned by the Division of Computer Services and Statistical Reports. Individual score reports, including item scores and scale scores, were generated for all participants. Summary data were generated by sex and total for each of the two groups (experimental and control), by sex regardless of group assignment, and for the total of both groups. These summary data included item and scale means and standard deviations. Other statistical analyses included items and scale intercorrelations, correlations of items with each of the six scales and correlations of the scales with the total survey. Each correlation matrix was factor analyzed, using the Wherry-Wherry software which performs varimax and hierarchical rotations after a modified principal components solution. This analysis can be used to test the hypothesis that the factor matrices are similar for the two groups.

A t-test for independent samples was used to test the hypothesis that there was no significant difference between scale means for the experimental and control groups. This comparison was particularly important since one letter describing the participation requirements (taking pretest and posttest) was sent to the control group. A different letter requesting the use of the manual, as well as the survey, was sent to the experimental participants. The fact that nineteen more control group volunteers returned pretests, even though the same number were included in the original samples, suggests that some experimental group members dropped out because too much time was required. The "drop outs" may not have been representative of the total group.

All respondents were guaranteed anonymity in all public reports of results, even though the project staff maintained lists of participants including names and the identification number coded on each answer sheet. This approach was taken to encourage honest,

rather than socially desirable, responses. This problem was lessened also by the fact that self-assessment was done in the privacy of one's home or office rather than group assessment in a faculty meeting or workshop.

Administering the Treatment Conditions

After the pretest survey answer sheets were scanned, the answer documents were returned to each of the ninety-six members of the experimental group, together with printed directions for the treatment phase and a copy of the revised self-intervention manual.

Participants were asked to record their survey responses in the appropriate sections of the manual, score the sixty items according to the key provided, and complete all of the activities before returning the entire manual to the project staff. The self-scoring procedure would not have been necessary if there had been time to wait for computer-printed reports for the individual participants, but the software which generated these reports was not available and there was not time for such delays. Participants were asked to return completed manuals and pretest answer sheets so that project staff could document the treatment condition and so that participants would not have access to their pretest responses as they completed the posttest survey.

After two letters and several telephone contacts, all ninety-six experimental group participants returned their completed manuals and pretest survey answer sheets. Only after all packages were collected did the next phase begin.

Conducting the Posttest and Evaluation Phase

Two weeks after the end of the Training Phase for the experimental group, posttest surveys (the same sixty items) and answer documents were sent to all two hundred eleven participants of both groups who had returned pretest answer documents nearly three months earlier. Respondents were encouraged to return the completed answer sheet immediately. After one follow-up letter and a telephone call, two hundred three answer sheets (96 percent), including those from all ninety-six experimental group members, were returned for scoring. It is significant to note that one hundred percent of those who were asked to complete the self-intervention manual and take a posttest survey finished all

phases.

The statistical procedures for the posttest survey included the same analyses for the same groups as described above in the Pretest Phase. Individual reports, however, included item and scale scores for both the pretest and posttest so that the respondent could make comparisons.

In addition, other statistical analyses (described in the summary of evaluation procedures below) were employed. These analyses included t-test comparison of independent group means on the posttest, t-test comparison by sex within group for both pretest and posttest, coefficient alpha by scale and for the total survey, and test-retest reliability based upon the correlation of pretest and posttest results for the control group.

Disseminating the Results

During the grant period, dissemination of information about procedures and products was accomplished through a number of media including: two articles for inclusion in the Communicator which is sent to every counselor and selected administrators in Ohio; five presentations to statewide conferences including teachers, counselors, teacher educators, counselor educators, administrators and business and industry leaders; eight regional workshops using the materials and procedures developed through the project; and numerous presentations and workshops in local districts. In addition, four districts or groups requested permission to use the materials with their entire staffs (see Appendix E). A presentation was also made to the state advisory councils for vocational education and for guidance and testing.

Permission to print additional dissemination copies of the survey and manual was granted by the United States Office of Education so that each vocational teacher, administrator, and counselor in Ohio and each of the other state departments of education could receive copies.

Evaluation Methods

The evaluation methods consisted of two parts: constructing and validating the survey instrument and determining if the self-intervention manual reduced bias in attitudes as measured by the survey.

The sixty-item survey was constructed from a pool of statements which had been rated for bias (Thorndike and Hagan, 1977) and categorized into one of thirty-two content dimensions. Items rated "high" in bias or "low" in bias were selected so that fluctuations would not be due to ambiguity in the item. The average item score on a one to five scale was already low so that any significant change toward the lower direction would be theoretically significant, as well as statistically significant.

The content validity of the instrument was determined in several ways. Items were chosen only if the judges made consistent bias ratings and assignments to content dimensions.

The empirical validity of the instrument was established through factor-analyzing the responses of several groups at different times to determine the consistency of the factor structure across time and across groups. If the survey were measuring similar attitudes across groups and across time, the factor structure would be similar each time.

The differential validity of the six scales was established through an analysis of the scale intercorrelations compared to scale reliabilities. If the scale intercorrelations were as high as scale reliabilities, no differential information was provided.

Construct validity was evaluated by testing the following hypotheses:

1. Males should have higher item, scale, and total scores than females.

2. Males also should have larger variation in responses as shown by higher deviations for items, scales and total.

3. Responses for the control group should be rather stable from pretest to posttest. This is a measure of survey reliability and also a measure of the construct validity of the instrument.

4. The items within a scale should be similar in content and correlate higher with each other than with items in other scales.

5. Content factors similar to the six scales should be identifiable from the factor matrix.

6. Two higher order factors should be identifiable from the hierarchical rotation: one containing biased items and one with loadings from unbiased items.

The reliability of the instrument was assessed in two ways: the standard coefficient alpha which yields measures of scale and total score internal consistency and the pretest to posttest correlation for the control group which gives measures of test-retest reliability.

The experimental design was a combination experimental comparison group and time series design. Members of the control and experimental groups were selected randomly from the pooled populations of vocational teachers, counselors and teacher educators in the state. Both groups were administered a pretest and posttest survey separated by nearly three months (late October to mid-January). Between the two administrations, the control group received no treatment while the experimental group completed the self-intervention manual. The control group was used in order to assess the change in attitudes due to taking the survey.

Results were evaluated through t-tests of group means. The differences between pretest means (experimental vs. control) were analyzed for significances prior to the experiment. The differences between posttest means of the two groups were analyzed after the treatment. If there was a significant difference between groups at the start, appropriate analyses would be conducted to take those differences into account. Sex differences within groups at a particular time were also analyzed.

The matrices of scale intercorrelations for the two groups were compared using the r to z' conversions and appropriate z-tests. Comparisons were made between the two pretest matrices and between the two posttest matrices. No comparison was made from pretest to posttest for the same group since no suitable standard error is available for z' comparisons for dependent groups.

The following research hypotheses regarding the treatment were evaluated:

1. The two groups (experimental and control) will receive similar scores on all six scales and the total for the pretest.
   (t-test evaluating differences)

2. The experimental group will receive lower scores on the five bias scales and the total after treatment.
   (t-test evaluting differences)

3. The two groups will respond the same on the "low bias" scale after the treatment.
   (t-test evaluting the difference)

4. The correlations matrices of scales for the two groups will be the same for the pretest, but different for the posttest.
   (z-test evaluating differences)

In conclusion, the procedures were designed to develop and field test a survey measuring attitudes toward sex role stereotypes in vocational education and a self-intervention manual. In addition, an experimental study involving a comparison group time series design was employed to evaluate the process and products.

CHAPTER III

RESULTS

Five sections are included in this presentation of results: one for each of the four phases in which data were collected and one for the evaluation results. Only the data related specifically to the study are presented in this chapter. Other data, including item and scale scores for each individual participating in the Pretest and Posttest Phases, are presented in the appendices.

Results from the Item Tryout Phase

One hundred six items covering thirty-two content dimensions were assembled and administered to one hundred fifty-four vocational teachers, counselors and administrators in three joint vocational schools and three career centers in Ohio. The results summarized in Table 1 following show the item means and standard deviations (S.D.'s) and the intercorrelations among items arranged according to the seven clusters. The items included here are only those sixty selected for the final form.

Items for the final form of the survey were selected to represent the content specifications (thirty of the original thirty-two dimensions) and to maximize the internal consistency of the seven clusters. Item statistics like those presented in Table 1 were used to delete items which did not appear related to other items in the cluster. The general rule-of-thumb was a correlation of .30 or greater with all of the other items in a cluster. Items with intercorrelations around this cut-off point were reviewed and included if they met two other criteria:

1. The item was related to one of the thirty dimensions not covered by other items.

2. The item correlated higher with items in this cluster than with items in any other cluster.

The items selected for inclusion in the final scale are identified in Table 2 by original item number, content dimension number, final form item number, cluster number, and preferred response (SA = Strongly Agree; SD = Strongly Disagree). Intercorrelations among all of the items, including those not selected, are presented in Appendix F.

Table 1

Item Means, S.D.'s, and Intercorrelations by Cluster for the Original Tryout Data

Cluster 1 (Dimensions: 4, 14, 15, 16, 24, 26, 31)											
Item No.	15	26	34	35	39	51	54	69	73	85	90
Mean	2.02	2.62	3.29	2.84	2.22	2.35	2.30	2.53	2.42	2.69	2.35
S.D.	1.06	1.21	1.15	1.15	1.10	1.09	1.00	1.14	1.07	1.12	1.01
Item No. 15	-	.31	.27	.38	.54	.64	.61	.51	.52	.52	.52
26		-	.37	.41	.50	.35	.42	.38	.50	.39	.54
34			-	.38	.39	.37	.34	.38	.46	.42	.47
35				-	.38	.41	.44	.41	.38	.59	.56
39					-	.51	.54	.51	.58	.51	.59
51						-	.69	.51	.46	.62	.56
54							-	.57	.56	.67	.57
69								-	.48	.50	.52
73									-	.52	.61
85										-	.66

Table 1 (continued)

Item Means, S.D.'s, and Intercorrelations by Cluster
for the Original Tryout Data

Cluster 2 (Dimensions: 25, 27, 28, 29, 30, 32)

Item No.	28	31	48	53	59	61	63	66	82	88	94	96	99	100	106
Mean	2.65	2.52	2.35	3.37	3.00	2.11	2.31	2.32	3.37	3.19	2.97	2.21	2.99	2.84	2.08
S.D.	1.20	.95	1.12	1.22	1.23	1.06	1.10	1.16	1.09	1.14	1.38	1.17	1.15	1.07	1.14
Item No.															
28	-	.39	.33	.31	.39	.23	.46	.27	.21	.18	.35	.36	.34	.29	.37
31		-	.44	.34	.44	.18	.32	.32	.32	.26	.47	.45	.34	.54	.43
48			-	.41	.60	.33	.44	.62	.40	.31	.57	.58	.41	.48	.57
53				-	.53	.36	.46	.46	.31	.40	.63	.49	.41	.36	.40
59					-	.38	.53	.56	.41	.38	.67	.58	.45	.46	.50
61						-	.32	.42	.17	.23	.42	.38	.20	.37	.24
63							-	.51	.34	.38	.53	.57	.40	.35	.48
66								-	.44	.37	.60	.62	.48	.47	.61
82									-	.42	.41	.30	.28	.38	.34
88										-	.39	.41	.27	.36	.32
94											-	.61	.41	.42	.53
96												-	.45	.45	.56
99													-	.32	.45
100														-	.41
106															-

Table 1 (continued)

Item Means, S.D.'s, and Intercorrelations by Cluster
for the Original Tryout Data

Cluster 3 (Dimensions: 3, 12, 13, 18, 19)								
Item No.	11	20	32	33	45	46	49	101
Mean	2.38	2.62	2.25	2.03	2.14	2.16	2.07	2.33
S.D.	.94	1.11	.95	.87	.90	.87	.91	.86
Item No.								
11	-	.41	.43	.46	.48	.34	.45	.50
20		-	.43	.34	.42	.35	.51	.34
32			-	.58	.48	.61	.50	.57
33				-	.53	.39	.41	.60
45					-	.48	.61	.44
46						-	.61	.46
49							-	.42
101								-

Cluster 4 (Dimensions: 8, 9, 21, 22)							
Item No.	7	8	44	58	77	103
Mean	2.21	2.19	2.86	2.56	2.34	2.73
S.D.	1.08	1.13	1.12	1.11	1.06	1.02
Item No. 7	-	.60	.40	.53	.59	.51
8		-	.47	.52	.60	.42
44			-	.51	.61	.42
58				-	.61	.42
77					-	.43
103						-

Table 1 (continued)

Item Means, S.D.'s, and Intercorrelations by Cluster for the Original Tryout Data

Cluster 5 (Dimensions: 1, 2, 5, 11)					
Item No.	1	2	5	71	74
Mean	2.36	2.38	2.01	2.43	2.51
S.D.	1.18	1.17	1.12	.94	1.01
Item No. 1	-	.68	.63	.40	.31
2		-	.63	.39	.29
5			-	.46	.40
71				-	.60
74					-

Cluster 6 (Dimensions: 6, 7, 17, 23)					
Item No.	16	25	42	75	87
Mean	2.57	2.29	2.43	2.37	2.81
S.D.	1.23	.97	.96	.81	1.13
Item No. 16	-	.34	.30	.32	.42
25		-	.39	.40	.24
42			-	.47	.44
75				-	.43
87					-

Table 1 (continued)

Item Means, S.D.'s, and Intercorrelations by Cluster
for the Original Tryout Data

Cluster 7 (Cuts across all dimensions; i.e., Unbiased Philosophical Equality)										
Item No.		18	24	30	56	60	64	70	86	91	95
Mean		1.60	2.23	1.37	1.73	1.90	1.47	1.94	1.97	1.52	2.16
S.D.		.95	1.20	.71	.82	.81	.72	.95	.87	.80	.96
Item No.	18	-	.26	.30	.35	.23	.35	.31	.37	.35	.16
	24		-	.25	.52	.40	.40	.60	.50	.44	.33
	30			-	.26	.19	.39	.26	.38	.36	.24
	56				-	.34	.40	.59	.50	.42	.31
	60					-	.41	.44	.45	.35	.36
	64						-	.45	.45	.49	.34
	70							-	.61	.55	.50
	86								-	.51	.45
	91									-	.29
	95										-

Table 2

Survey Item Assignment After Tryouts

Original Item No.	Content Dimension No.	Final Form Item No.	Cluster No.	Preferred Response
1	1	1	5	SD*
2	2	2	5	SD
5	5	3	5	SD
7	8	4	4	SD
8	9	5	4	SD
11	12	6	3	SD
15	16	7	1	SD
16	17	8	6	SD
18	28	9	7	SA*
20	13	10	3	SD
24	32	11	7	SA
25	23	12	6	SD
26	24	13	1	SD
28	25	14	2	SD
30	30	15	7	SA
31	32	16	2	SD
32	18	17	3	SD
33	19	18	1	SD
34	31	19	1	SD
35	26	20	1	SD
39	4	21	1	SD
42	7	22	6	SD
44	9	23	4	SD
45	12	24	3	SD
46	3	25	3	SD
48	32	26	2	SD
49	13	27	3	SD
51	16	28	1	SD
53	28	29	2	SD
54	14	30	1	SD
56	32	31	7	SA
58	22	32	4	SD
59	32	33	2	SD
60	23	34	7	SA
61	25	35	2	SA
63	27	36	2	SD
64	28	37	7	SA
66	32	38	2	SD

*SD = Strongly Disagree and SA = Strongly Agree

Table 2 (continued)

Survey Item Assignment After Tryouts

Original Item No.	Content Dimension No.	Final Form Item No.	Cluster No.	Preferred Response
69	31	39	1	SD*
70	26	40	7	SA*
71	2	41	5	SD
73	4	42	1	SD
74	5	43	5	SD
75	6	44	6	SD
77	8	45	4	SD
82	32	46	2	SD
85	15	47	1	SD
86	16	48	7	SA
87	17	49	6	SD
88	28	50	2	SD
90	15	51	1	SD
91	32	52	7	SA
94	32	53	2	SD
95	24	54	7	SA
96	25	55	2	SD
99	28	56	2	SD
100	29	57	2	SD
101	19	58	3	SD
103	21	59	4	SD
106	30	60	2	SD

*SD = Strongly Disagree and SA = Strongly Agree

It was hypothesized that males would have higher bias scores and greater variation in response than would females. To test that hypothesis, an average item score was calculated for each cluster. These "typical item scores" (or grand item means) could be compared across clusters, as well as between groups. The standard deviation of these average item scores was also calculated for both groups to determine variation in the average item response.

The results are shown in Table 3 below:

Table 3

Average Item Performance by Sex
for Seven Tryout Clusters

Cluster	MALES Grand Item Mean	S.D.	Cluster	FEMALES Grand Item Mean	S.D.
1	2.81	.77	1	2.02	.56
2	2.99	.73	2	2.19	.55
3	2.38	.77	3	2.06	.42
4	2.75	.84	4	2.03	.54
5	2.65	.81	5	1.81	.55
6	2.75	.74	6	2.07	.55
7	1.97	.64	7	1.49	.32

In every cluster the "typical" male had a higher average item score than did the "typical" female. Males also had greater variability in the way they responded to the "typical" item than did females. It is important also to note that the average item score for each of the first six clusters (including high bias items) was well above that for cluster seven which contained the philosophical equality statements.

Other support for this hypothesis was the fact that males scored higher than females on every one of the sixty items. The difference was significant at least at the .05 level for fifty-six of the sixty items.

The item intercorrelations were used together with an analysis of content to develop initial clusters as shown in Table 2. After further analysis of the content of the items and item intercorrelations, new scales were established for inclusion in the intervention manual. The items were grouped according to six scales which

were maintained throughout the remainder of the project. The items assigned to each scale are listed in the manual.

It is not surprising to find these six scales fairly well defined in the factor structure for males in the Item Tryout Phase because the intercorrelations were used in part to define the scales and males made up about two-thirds of the total Tryout population. Factor I, for example, has its highest loadings from items 6, 16, 17, 41, 43, and 58 all assigned to Scale 3 (or group C in the manual). Factor II is clearly similar to Scale 6 (or group F) with highest loadings from items 9, 11, 15, 31, 37, and 52. Factor III is very similar to Scale I (or group A) with moderate to high loadings from items 3, 7, 28, 30, 38, 39, and 46. Factor IV is defined in part by items 8, 12, and 25 which comprise part of the ability scale (group E). Scale 4 (group D) seems to be related to Factor V since items 19, 20, 23, 32, 33, 45, and 57 have moderate loadings on it. The only scale which does not seem to hold up empirically in the factor structure is Scale 2 (group B) which relates to the importance or purpose of employment.

Results from the Field Test

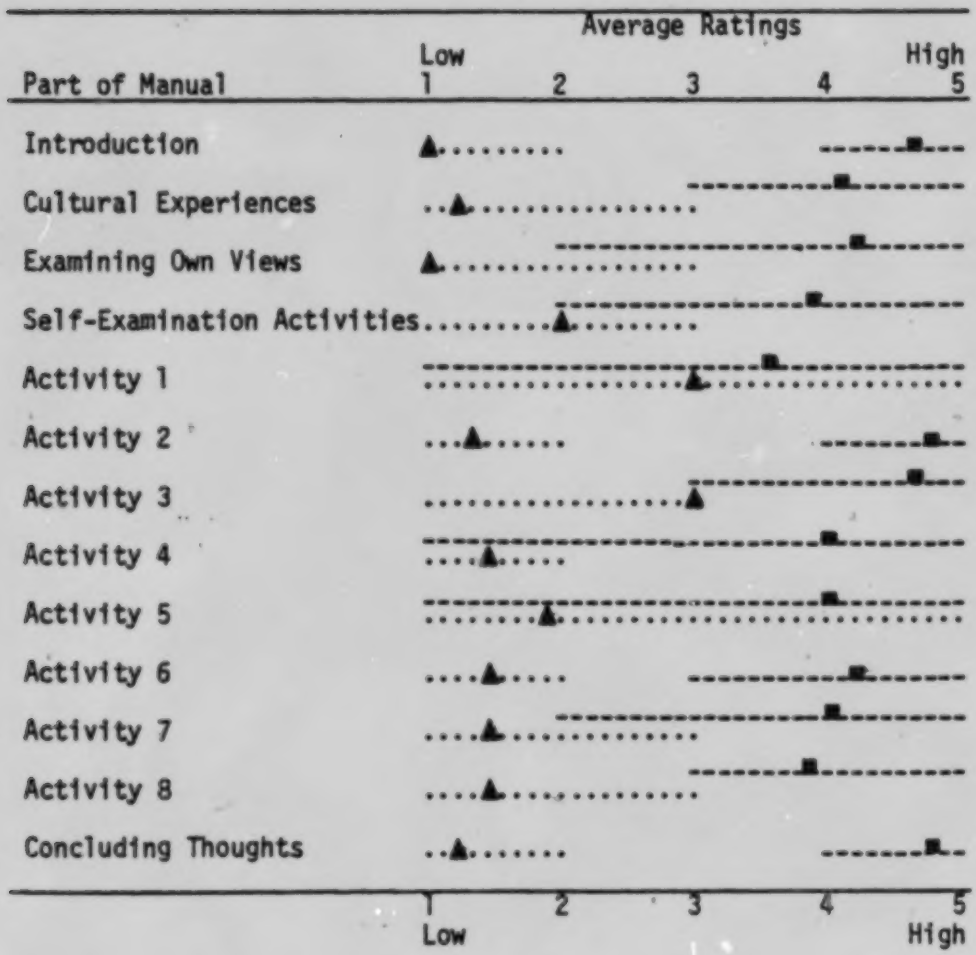
The main purposes of the Field Test were to make final revisions in the survey, to critique and revise the intervention manual, and to determine whether or not attitudes measured by the survey could be changed by the manual. The first objective was accomplished by having respondents make suggestions regarding the survey. Only minor adjustments were made after the Field Test.

Suggestions for improving the manual were solicited and many were received from the members of summer institutes and the graduate course in career guidance. The project consultant also devised an evaluation form designed to collect evaluation ratings on each part of the manual. Figure 4 on page 31 summarizes the average ratings of how effective each part of the manual was and of how difficult it was. The range of responses is also plotted for each section.

From the profiles shown, it is clear that most sections of the manual were judged to be effective and easy to do. Suggestions were used by the project consultant and staff to make modifications. For example, Activity 5 which was judged by several to be low in effectiveness was completely revised to require more involvement.

Figure 4

Profile of Field Test Evaluations
of Manual Effectiveness and Difficulty
N = 60



Legend: ■ Average Effectiveness Rating

▲ Average Difficulty Rating

.... Range of Responses on Difficulty

---- Range of Responses on Effectiveness

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The only major criticism of the total package was that it was "too school oriented." Since the primary purpose of these materials was to provide educators with a set of activities designed for reducing barriers for students enrolled in nontraditional vocational education programs, this criticism was actually considered to be a compliment.

The item responses for each participant in the Field Test Phase were compared from pretest to posttest to determine whether or not the intervention manual made any difference in attitudes measured by the sixty-item survey. A straightforward "sign test" was used. If an individual's item score increased from pretest to posttest (showed greater bias), the individual was scored "plus" (+). If an individual's item score decreased from pretest to posttest (showed less bias), the individual was scored "minus" (-). If the intervention made a difference in the attitude measured by an item, the sum of the "minuses" would be greater than the sum of the "pluses" for that item. Forty-seven of the sixty items showed a net effect in the desired direction. Six of the other items showed no effect in either direction while seven items demonstrated a net gain or increase in bias score. Of the thirteen items for which the responses were not in the desired direction, four were in cluster seven (the philosophical equality scale) in which no change was predicted.

These data from the Field Test were supportive of the overall process employed in the intervention strategy. There were, of course, at least two other plausible explanations for these predicted changes in survey responses besides the effect of the intervention manual: the change could be due to "practice" effect since the two administrations of the survey were one to two weeks apart and the manual itself contained a third exposure to the items; or it could be due to a general awareness of sex role stereotypes triggered by the survey itself and not by the intervention manual. The design of the experimental phase was planned to check these alternative explanations. For whatever reason, change in the desired direction did occur and work on the manual continued.

Results of the Pretest

Pretest survey item means and standard deviations are reported by group and sex in Appendix G. In this section, data are presented only for the six scales and the total survey, not for each individual item. Table 4 on page 33 shows the scale means, standard

Table 4

Scale Mean, S.D.'s and Average Item Scores
by Sex and Group
(Pretest)

	Experimental						Control						Total					
	Males (N = 47)			Females (N = 49)			Males (N = 67)			Females (N = 40)			Males (N = 114)			Females (N = 89)		
Scale	Mean	S.D.	Avg. Item Score	Mean	S.D.	Avg. Item Score	Mean	S.D.	Avg. Item Score	Mean	S.D.	Avg. Item Score	Mean	S.D.	Avg. Item Score	Mean	S.D.	Avg. Item Score
1	37.4	10.5	2.67	29.7	9.9	2.12	39.9	10.1	2.85	27.7	10.0	1.98	38.9	10.3	2.78	28.8	10.0	2.06
2	20.6	5.6	2.58	16.2	6.0	2.03	22.7	5.8	2.84	15.1	5.6	1.89	21.8	5.8	2.73	15.7	5.8	1.96
3	34.9	7.6	2.49	29.8	10.0	2.13	35.9	8.7	2.56	28.0	9.7	2.0	35.5	8.3	2.54	29.0	9.9	2.07
4	28.4	7.8	2.58	22.5	7.6	2.05	30.3	7.3	2.75	21.2	7.6	1.93	29.5	7.5	2.68	21.9	7.6	1.99
5	17.5	4.6	2.5	14.0	5.0	2.0	18.4	5.1	2.63	14.1	5.3	2.01	18.0	4.9	2.57	14.1	5.1	2.01
6	10.8	3.9	1.8	8.5	3.0	1.42	10.9	3.5	1.81	9.0	3.4	1.5	10.9	3.7	1.82	8.7	3.2	1.45
Total	149.6	35.4	2.49	120.6	36.8	2.01	158.0	34.4	2.63	115.2	35.8	1.92	154.5	34.9	2.58	118.2	36.2	1.97

deviations, and average item score by sex and group for the pretest administered in late October 1978. It should be noted that the data presented include only those participants who completed both the pretest and the posttest. Nine control subjects did not submit completed posttest answer sheets.

Several results are clear. Males in both groups received significantly ($p<.05$) higher bias scores than females on all six scales and on the total. The experimental subjects (both males and females) tended to have lower bias scores than the participants in the control group, but none of these differences was statistically significant ($p>.05$). The t-test values are shown in the evaluation section which follows. Although there was a greater proportion of males in the control group than in the experimental group, this did not seem to affect the results. The difference between experimental and control males was about the same as the difference between experimental and control females on each of the six scales. The only other factor which might explain this systematic (though statistically nonsignificant) difference is the letter which was sent to "volunteers" explaining their participation. The letter sent to experimental subjects outlined more work and greater time commitment than that sent to control participants. This letter to the experimental group may have discouraged "volunteers" who were less enthusiastic about the effects of sex-role stereotyping to the extent that those with low commitment did not even return the completed pretest.

The item intercorrelations by sex and group are reported in Appendix G. Scale intercorrelations are recorded for males by group in Table 5A and for females by group in Table 5B which follows on page 35.

Two results are evident from the data presented in these tables: the pretest correlation matrices are very similar across sex and across groups and the intercorrelations among scales (except scale 6) are very high. One does not need a factor analysis to see that most of the items in five of the scales are highly related (that is, people who tend to get high scores on one scale tend to get high scores on the others, except scale 6). The first five scales correlate lower with scale 6 because it is the philosophical equality scale which most people, regardless of underlying stereotypes, will support strongly.

Since the correlation matrices are so similar across groups, the pretest factor analysis solution is interpreted only for the total

Table 5A
Scale Intercorrelations for Males by Group - Pretest

Scale	Scale 1		Scale 2		Scale 3		Scale 4		Scale 5		Scale 6		Total	
	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.
1	-	-	.78	.65	.79	.70	.91	.86	.82	.74	.55	.50	.96	.93
2			-	-	.60	.60	.79	.67	.61	.53	.53	.41	.83	.77
3					-	-	.76	.76	.84	.69	.41	.39	.87	.87
4							-	-	.82	.78	.55	.40	.95	.93
5									-	-	.49	.32	.89	.83
6											-	-	.63	.55
Total													-	-

Table 5B
Scale Intercorrelations for Females by Group - Pretest

Scale	Scale 1		Scale 2		Scale 3		Scale 4		Scale 5		Scale 6		Total	
	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.
1	-	-	.84	.71	.86	.85	.92	.87	.84	.70	.13	.29	.96	.94
2			-	-	.73	.63	.81	.79	.75	.54	.12	.40	.87	.81
3					-	-	.91	.73	.89	.84	.14	.36	.94	.92
4							-	-	.88	.66	.16	.38	.97	.91
5									-	-	.01	.37	.91	.83
6											-	-	.21	.47
Total													-	-

group of all subjects who participated in both the pretest and posttest (N = 203). One higher order factor (general sex role stereotyping) received loadings higher than .50 from forty-eight of the sixty items. None of the six items in Scale 6 were loaded more than .31 on this factor. The solution also yielded four weak content factors. Factor I which contained weak negative loadings from a few items across several scales was not interpretable. Factor II received the largest loadings from the items in Scale 6 (Philosophical Equality). Factor III was defined by items with moderate loadings from several items dealing with sensitivity and caring. Factor IV was not interpretable. The findings from this analysis suggest that scale scores (except for Scale 6) do not provide much diagnostic information which is not already available from the total score.

The final descriptive statistic available from the pretest results was the coefficient alpha reliability estimate which was calculated on the total group of participants for each scale and for the total. Table 6 below contains the number of items (k), the sum of item variances ($\Sigma\sigma_i^2$), the total variance for the scale or survey (σ_t^2), and the reliability estimate (r_{tt}).

Table 6

Item and Scale Variance and Coefficient Alpha Pretest

	Scale 1	Scale 2	Scale 3	Scale 4	Scale 5	Scale 6	Total
k	14	8	14	11	7	6	60
$\Sigma\sigma_i^2$	16.98	10.65	16.0	13.36	8.14	5.93	70.98
σ_t^2	128.07	42.74	91.18	71.15	28.77	13.05	1580.81
r_{tt}	.93	.86	.89	.89	.84	.65	.97

The coefficient alpha (r_{tt}) is an estimate of the internal consistency of items within a scale or in the total survey. The results were very respectable. Only Scale 6 had a reliability estimate below .80 and that can be explained partly in terms of the length of the scale (only six items) and partly in the low variability in

responses to items in this scale.

Results of the Posttest

Posttest survey item means and standard deviations are reported by group and sex in Appendix G. In this section, data are presented only for the six scales and the total survey, not for each individual item. Table 7 on page 38 shows the scale means, standard deviation, and average item scores by sex and group for the posttest administered in early to mid-January 1979.

Several findings are important to the study. Participants in the experimental group posttest received lower bias scores on all scales and on the total than they did in the pretest. Participants in the control group scored about the same on the posttest as they did on the pretest. In the experimental group, the average item scores for males were considerably higher than those for females. These findings will be discussed further in the last section of this chapter. As was true in the pretest, females generally received lower bias scores on all parts of the survey than did males.

The item intercorrelations by sex and group are reported in Appendix G. Scale intercorrelations are recorded for males by group in Table 8A and for females by group in Table 8B which follows on page 39.

As in the case with the pretest, the posttest correlation matrices are very similar across sex and across groups (except Scale 6 which will be discussed later). The intercorrelations are very high except for Scale 6, as in the pretest. The major stereotyping factor seems to be running throughout the survey as evidenced by scale intercorrelations which are equal to or higher than scale reliability estimates. One finding which is very important to the overall study was the result that the intercorrelations between each of the "bias" scales and Scale 6 were considerably larger for the experimental group than for the control group. This finding is consistent with the theoretical position that conflicts in attitudes can be resolved through a self-intervention, self-confrontation model. Other data will be presented on this issue in the final section of this chapter.

Since the correlation matrices are somewhat different across groups, the posttest factor analysis solution is interpreted separately for the total control group (N = 107) and the total

Table 7

Scale Means, S.D.'s and Average Item Scores
by Sex and Group
(Posttest)

	Experimental						Control						Total					
	Males (N = 47)			Females (N = 49)			Males (N = 67)			Females (N = 40)			Males (N = 114)			Females (N = 89)		
Scale	Mean	S.D.	Avg. Item Score	Mean	S.D.	Avg. Item Score	Mean	S.D.	Avg. Item Score	Mean	S.D.	Avg. Item Score	Mean	S.D.	Avg. Item Score	Mean	S.D.	Avg. Item Score
1	31.9	12.8	2.28	26.4	10.9	1.89	39.1	10.8	2.79	29.4	11.3	2.1	36.1	12.1	2.57	27.7	11.1	1.98
2	18.2	6.7	2.28	15.3	6.1	1.91	22.6	5.9	2.82	16.0	5.8	2.0	20.8	6.6	2.6	16.6	5.9	1.95
3	29.5	10.9	2.11	26.3	10.2	1.88	35.3	8.3	2.52	29.4	10.2	2.1	32.9	9.8	2.35	27.7	10.2	1.98
4	24.2	9.8	2.2	20.2	8.0	1.84	29.9	7.4	2.72	22.1	8.0	2.01	27.5	8.9	2.5	21.0	8.0	1.91
5	15.6	5.9	2.23	14.4	5.7	2.06	17.7	5.2	2.53	14.7	5.0	2.1	16.8	5.5	2.4	14.5	5.4	2.07
6	9.2	3.5	1.53	8.9	4.3	1.48	11.1	3.7	1.85	8.0	2.3	1.33	10.3	3.7	1.72	8.5	3.5	1.42
Total	128.5	45.9	2.14	111.6	40.3	1.86	155.8	35.6	2.60	119.5	37.9	1.99	144.6	42.2	2.41	115.1	39.2	1.92

Table 8A
Scale Correlations for Males by Group - Posttest

cale	Scale 1		Scale 2		Scale 3		Scale 4		Scale 5		Scale 6		Total	
	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.
1	-	-	.86	.73	.87	.78	.94	.88	.80	.80	.64	.30	.96	.94
2			-	-	.84	.71	.92	.71	.78	.69	.62	.41	.93	.84
3					-	-	.88	.84	.78	.81	.57	.29	.94	.91
4							-	-	.82	.81	.62	.26	.97	.93
5									-	-	.63	.30	.88	.89
6											-	-	.69	.42
otal													-	-

Table 8B
Scale Correlations for Females by Group - Posttest

Scale	Scale 1		Scale 2		Scale 3		Scale 4		Scale 5		Scale 6		Total	
	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.
1	-	-	.82	.86	.86	.86	.93	.90	.87	.66	.35	.09	.96	.94
2			-	-	.78	.85	.85	.89	.71	.71	.32	.18	.87	.93
3					-	-	.87	.85	.82	.84	.41	.13	.94	.95
4							-	-	.81	.73	.43	.16	.96	.95
5									-	-	.37	.18	.89	.83
6											-	-	.49	.21
Total													-	-

experimental group (N = 96). The hierarchical analysis for the control group yielded four higher order factors and eight primary content factors. The first higher order factor seems to contain those items to which males typically react strongly (for example, item 18: Men have fewer original ideas than women; and item 24: Men are generally more insensitive to others.). The second higher order factor contains items 9, 11, 15, 31, and 52. In addition, although not large, the loading for item 37 on this factor, which illustrates the philosophical equality factor, is larger than on any other factor. The third factor is one which, like the first, seems to be sex-related. That is, it contains items to which females seem to react more uniformly than males (for example, item 3: Important decisions should be made by men rather than women; and item 26: If a male and female candidate have the same qualifications for a high school principalship, the male should get the job.). The fourth higher order factor contains loadings by most items except the "equality" items; therefore, this factor demonstrates the general stereotyping factor. The primary factors are too weak to interpret adequately.

The hierarchical rotation for the control group yielded three higher order and nine weak, uninterpretable primary factors. The first higher order factor is sex-related. It contains items to which females tend to react very strongly (for example, item 3: Important decisions should be made by men rather than women; and item 7: Men make decisions based on sound logic more often than women.). The second factor seems to be the equity factor because it has loadings from Scale 6 items, but it also has high loadings from several other items (e.g., 5, 12, 22, and 41). This finding was especially encouraging since the purpose of the project was to reduce sex role stereotypes and conflict between these stereotypes and the belief of equality for both males and females. The third factor is, like the first, sex-related. It contains items to which males generally reacted strongly. Two such items are number 6: Women are better counselors than men because women show more empathy; and number 16: Jobs requiring skills in caring for other people are performed best by women.

The final descriptive statistics available from the posttest results were reliability estimates: coefficient alpha and test-retest coefficients. The coefficient alpha was calculated on the total group of participants in the posttest and the test-retest estimate is the correlation between pretest and posttest results for the control group. Table 9 on the following page contains the

number of items (k), the sum of item variances ($\Sigma\sigma_i^2$), the total variance for the scale or survey (σ_t^2), the coefficient alpha estimate (r_{tt}), and the test-retest correlation coefficient (r_{12}).

Table 9

Item and Scale Variance, Coefficient Alpha, and Test-Retest Reliability Posttest

	Scale 1	Scale 2	Scale 3	Scale 4	Scale 5	Scale 6	Total
k	14	8	14	11	7	6	60
$\Sigma\sigma_i^2$	17.33	10.77	15.29	13.77	8.07	6.06	71.3
σ_t^2	153.26	46.15	106.4	82.71	31.3	13.9	1877.71
r_{tt}	.96	.88	.92	.92	.87	.68	.98
r_{12}	.79	.77	.67	.74	.73	.67	.80

The estimates of reliability reported above are very adequate for such an instrument. The results show that the instrument has high internal consistency and that the results are fairly stable over approximately three months. As expected, the test-retest correlation coefficients for the experimental group were much lower than those reported for the control group. The correlations between pretest and posttest for the experimental group range from .53 for Scale 5 to .64 for the total.

Evaluation Results

The evaluation design included an experimental comparison, time series study in which one of two randomly selected groups was designated Experimental and the other Control. Both groups were administered a sixty-item survey of attitudes toward sex role stereotypes. The resulting means and standard deviations are presented in the preceding Table 4. After the Experimental group had received the treatment (the intervention manual), both groups were given the same survey a second time. The means and standard deviations of this posttest are reported in the preceding Table 7.

The previous data have shown that, after treatment, the Experimental group changed in the desired direction, while the Control

group scored about the same. There were, however, systematic differences between the two groups on the pretest. These differences on the pretest were evaluated by the t-test for independent means, the values of which are reported in Table 10 below. In addition the level of significance is expressed as a p-value, the proportion of such differences which are expected to occur by chance. For example, if a difference could have occurred due to sampling error fewer than five times in one hundred, the level is expressed as p is less than(<).05.

Table 10

Pretest Differences (D), t-Values, Level of Significance (p) and N (Size)

	Males N_c=67; N_e=47			Females N_c=49; N_e=40			Total N_c=107; N_e=96		
	D[a]	t	p	D	t	p	D	t	p
Scale 1	2.5	1.27	>.05	-2.0	.93	>.05	2.0	.50	>.05
Scale 2	2.1	1.91	>.05	-1.1	.88	>.05	1.6	1.74	>.05
Scale 3	1.0	.63	>.05	-1.8	.85	>.05	0.6	.44	>.05
Scale 4	1.9	1.32	>.05	-1.3	.79	>.05	1.5	1.26	>.05
Scale 5	0.9	.96	>.05	0.1	.09	>.05	1.1	1.45	>.05
Scale 6	0.1	1.42	>.05	0.6	.87	>.05	0.6	1.18	>.05
Total	8.4	1.26	>.05	-4.6	.69	>.05	7.2	1.28	>.05

[a]D=Control - Experimental Mean

The hypothesis that there was no significant difference between the two groups on any of the scales or the total sixty-item survey is accepted on the basis of the data evaluated. Although the control group systematically received higher "bias" scores, these were well within the range of differences due to sampling error.

The means for the same posttest survey were evaluated and are presented in exactly the same format in Table 11 which follows. The t-test was used to evaluate the differences and the level of significance was expressed as the proportion (p) of similar findings which could occur by chance.

Table 11

Posttest Differences, t-Values,
Level of Significance and N (Size)

	Males N_c=67; N_e=47			Females N_c=49; N_e=40			Total N_c=107; N_e=96		
	D[a]	t	p	D	t	p	D	t	p
Scale 1	7.2	3.22	<.01	3.0	1.26	>.05	6.3	3.94	<.001
Scale 2	4.4	3.67	<.001	0.7	.54	>.05	3.4	3.67	<.001
Scale 3	5.8	3.19	<.01	3.1	1.41	>.05	5.3	3.76	<.001
Scale 4	5.7	3.50	<.001	1.9	1.10	>.05	4.8	3.87	<.001
Scale 5	2.1	1.99	<.05	0.3	.26	>.05	1.6	2.04	<.05
Scale 6	1.9	2.74	<.01	-0.9	1.18	>.05	0.9	1.72	>.05
Total	27.3	3.54	<.001	7.9	.95	>.05	22.3	3.76	<.001

[a]D=Control - Experimental Mean

The hypothesis that there was no significant difference between the two groups on the posttest scales and total survey score is rejected for males and the total group, but accepted for females. The data for the total group support the research hypotheses exactly. That is, there are significant differences on the first five scales and the total, but no significant difference on Scale 6 (the equality scale). The intervention strategies did not seem to work at all for females as no significant differences were found on any of the scores. The results for males demonstrate significant reduction in bias as measured by all scales including the "equality" scale.

The data in Table 12 demonstrate that there were significant sex differences in the control group on all scales and the total instrument for both the pretest and posttest. There were also significant sex differences in the experimental pretest results except Scale 2. As hypothesized, there were no significant sex differences for any of the experimental posttest results.

Table 12

Comparison Across Sex for Each Group at Each Time

	Control (Pre) Males vs Females		Control (Post) Males vs Females		Experimental (Pre) Males vs Females		Experimental (Post) Males vs Females	
	t	p	t	p	t	p	t	p
Scale 1	4.28	<.001	3.09	<.01	2.59	<.05	1.60	>.05
Scale 2	4.72	<.001	3.99	<.001	1.76	>.05	1.56	>.05
Scale 3	3.01	<.01	2.22	<.05	2.00	<.05	1.05	>.05
Scale 4	4.30	<.001	3.56	<.001	2.64	<.01	.77	>.05
Scale 5	2.91	<.01	2.08	<.05	2.51	<.05	.71	>.05
Scale 6	1.95	>.05	3.76	<.001	2.30	<.05	.27	>.05
Total	4.29	<.001	3.47	<.001	2.77	<.01	1.35	>.05

The impact of the intervention strategies on attitudes measured by the survey was evaluated in one other way. It was hypothesized that, if the activities in the manual were successful in reducing the conflict between sex role stereotypes and belief in equality statements, the posttest correlations between each of the first five scales and Scale 6 should be greater for the experimental group than for the control group. To test this, the scale intercorrelations were first converted to Fisher's z' through the standard r to z' table.

The difference between two groups was evaluated according to the following:

$$z = \frac{(z'_c - z'_e) - 0}{\sqrt{\frac{1}{N_c - 3} + \frac{1}{N_e - 3}}}$$

where z is a regular z score.

Since the treatment did not seem to make a difference for females, this analysis was run only for males. The results are shown in Table 13 which follows.

Table 13

r to z' Conversions and z Scores
for Males (Control vs. Experimental)
Scales 1-5 with Scale 6

	r_{16}[a]		r_{26}		r_{36}		r_{46}		r_{56}	
	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.
z'	.758	.310	.725	.436	.648	.299	.725	.266	.741	.310
z-score	2.28		1.48		1.78		2.34		2.20	
p	<.05		>.05		>.05		<.05		<.05	

[a] r_{16} = the correlation between scales 1 and 6; r_{26} = the correlation between scales 2 and 6; etc. Each r is then converted to a z'.

The correlation between each scale and Scale 6 was converted to a z' first for the experimental and then for the control groups. The difference between these is evaluated by the formula to obtain a z-score. The resulting p is the proportion of such values which could occur by chance. The evidence presented in the table tends to support the hypothesis since three of the five posttest scales have a significantly higher intercorrelation with Scale 6 in the experimental group than in the control group. When these same comparisons were made on the pretest data, none of the z-scores even approached the .05 level of significance.

The analysis was not run between pretest and posttest results for the same group because no suitable error term (the denominator of the formula) is available for such comparisons between dependent groups (in this case the same participants).

In conclusion the following are findings supported by the data:

1. The survey has high scale and total reliability as estimated by coefficient alpha and test-retest methods.

2. The survey has content validity as judged by experts, contains strong bias and equality factors, but provides little diagnostic information across scales.

3. The control and experimental groups performed about equally on the survey pretest.

4. The intervention manual made a difference as evidenced in statistically significant differences between the two groups on the posttest survey.

5. There was little or no difference between groups in posttest results for females, but significant differences in all scales and the total score for males.

6. A Fisher z' was used for a comparison across groups of intercorrelations between each scale and Scale 6 (the equality items). The results showed that the correlations between three of the five scales and Scale 6 were significantly larger for experimental males than for control males. This was interpreted to mean that the conflicts in views represented by the bias scales and the equality scales were reduced by the treatment. No differences were found in the pretest analysis.

CHAPTER IV

CONCLUSIONS

The discussion in this chapter is divided into two parts: conclusions related to the accomplishment of the project objectives and conclusions from the experimental study related specifically to the hypotheses tested.

Accomplishments of Project Objectives

> Objective 1: To define and delimit objectives (expectations) and behavior which perpetuate sex discrimination in vocational education.

This objective was met by the following process: reviewing existing literature, listing stereotypes which could be restrictive, validating the list through review by the ad hoc committee, defining the bipolar content dimensions, and validating empirically these dimensions.

> Objective 2: To develop a valid and reliable self-administered instrument for use by vocational teachers and counselors in uncovering biases and/or internal inconsistencies related to sex role stereotyping and sex discrimination.

The sixty-item survey was developed specifically to match the content dimensions referred to above. The content validity of these instruments was certified by the ad hoc committee and the project staff. Empirical data reflect two strong factors in the survey: philosophical equality and general sex role stereotyping. Since specific stereotypes are apparently idiosyncratic, the five bias scales which group several stereotypes did not serve a diagnostic function. The concept of focusing on specific groups of stereotypes is intuitively appealing, but there was little empirical support in this work.

The total survey and the six scales have high internal consistency estimates and relatively high stability in a test-retest (after a three-month interval) situation.

> Objective 3: To initiate changes in the attitudes and behaviors of vocational teachers and counselors through

a self-intervention manual including focusing techniques and activities for improvement.

The data from the Field Test suggested that changes in attitudes measured by the survey did occur after employing the activities in the manual. There was no way of determining, however, which changes were due to the manual (treatment) and which were due to the use of the survey or some other source.

Data from the experimental phase were used to confirm that the results were attributable to the treatment.

Objective 4: To evaluate quantitatively and qualitatively the resulting changes in attitudes and behaviors.

The second section of this chapter will discuss the research hypotheses and conclusions based upon data collected as part of the fulfillment of this objective. In addition, the qualitative evaluations by the Field Test participants and by persons attending workshops in which the materials were used have been most favorable.

Objective 5: To disseminate through appropriate journal articles and through the U.S. Office of Education the process and products for use in preservice and staff development programs across the nation.

A brochure describing the process and products was printed, together with the survey and self-intervention manual. These will be distributed to every vocational teacher, counselor, and teacher educator in Ohio, to the U.S. Office of Education, and to the other state departments of education. The process has been adapted for general use by several school districts and vocational education planning districts. Several presentations have been made and others are scheduled. Several articles are being prepared for submission to professional journals.

Research Hypotheses Evaluated by the Experimental Design

Hypothesis 1: Males should have higher scale and total scores than females in every instance except on the experimental group posttest.

This hypothesis was supported by the data. Control group males received significantly higher scores than females on all scales

in both the pretest and posttest situations. Experimental group males received significantly higher scores on all but one scale in the pretest, but there were no significant differences between experimental males and females on the posttest. This hypothesis was made based on the fact that item scores by females were skewed toward the lowest possible score even on the pretest. Their scores could not be reduced much. Males on the other hand, received higher scores so the reduction was not limited so much by the item scoring system.

> Hypothesis 2: Males also should have larger variation in responses as shown by higher standard deviations for scales and the total survey.

This was generally not supported by the data. There seemed to be no consistent pattern in variation due to sex differences. On some scales, females showed greater variation, while on others the male group had a larger standard deviation. This finding may have been due to the fact that means for female groups were generally very low which resulted in all extreme scores by females being further from their mean (hence a larger standard deviation than extreme scores for males were from their mean).

> Hypothesis 3: Responses for the control group should remain relatively stable from pretest to posttest.

The test-retest correlation coefficients ranged from .67 (for a short scale) to .80 for the total survey. These findings support the hypothesis that the survey measures attitudes toward sex role stereotyping consistently across time.

> Hypothesis 4: Items within a scale should be similar in content and correlate higher with each other than with items in other scales.

The items were assigned to a scale first on the basis of content and second on the basis of empirical data (namely, item intercorrelations). The item tryout correlation matrices on which these decisions were based are included in Appendix F. The scales and total survey are internally coherent. The factor matrices from the experimental study, however, suggest that there are not six interpretable content factors for any of the groups. The two factors which emerged clearly were a general sex role stereotyping factor and an equality factor.

Hypothesis 5: Six content factors should be interpretable from the data.

The data did not support this conclusion.

Hypothesis 6: Two higher order factors should be identifiable with one containing biased items and one equality statements.

This conclusion was supported by the data derived from the hierarchical rotation of the varimax loadings yielded from both the pretest and posttest data. In addition two higher order sex-specific factors were also determined with loadings from statements to which the males and females responded differently. One included certain male stereotype statements which seemed to "unite" males and the other included certain female stereotypes which seemed to "unite" females.

Hypothesis 7: The two groups (experimental and control) will perform equally on the total survey and all scales of the pretest.

There were no significant differences due to group assignment on the pretest. The experimental group consistently received lower scores than the control group, but the differences were not significant. These systematic differences could be due to the larger time commitment requested initially from the experimental group volunteers which may have caused all disinterested persons to drop out of that group before the pretest. The control group volunteers, on the other hand, were asked only to complete the survey twice (a total of about twenty minutes). In any case, the difference was not large enough to warrant statistical controls of the posttest results.

Hypothesis 8: On the posttest the experimental group will receive lower bias scores than the control group on the total and the first five scales.

For males and females combined, the hypothesis was supported by the data. That is, the experimental group achieved significantly lower scores on the total and on the first five scales. Experimental males received lower scores than control males on all scales and on the total survey. Experimental and control females scored about the same on all parts and on the total instrument.

The main conclusion here is that males show greater changes in bias scores than females. Since most of the activities in the manual are loaded heavily with content designed to change stereotypes about females, this finding is not too surprising. Perhaps additional attention is needed on changing stereotypes about males. Also, as noted previously, pretest item means for females approached the lowest possible score. Reduction in scale scores, therefore, was more limited for females than for males.

> Hypothesis 9: The two groups will respond the same on Scale 6 (low bias) after treatment.

This hypothesis was supported for the total group and for the females in the two groups, but experimental males scored significantly lower than control males on Scale 6 of the posttest. This finding may have been due to an overall increased sensitivity to the problem of sex role stereotyping.

> Hypothesis 10: The correlation matrices of scales for the two groups will be the same for the pretest, but different for the posttest.

This hypothesis was supported in part by the data collected. An r to z' conversion was made for intercorrelations involving Scale 6 for experimental and control males. Females were not included since the scores for the two groups of females did not differ on the posttest. A z-test of the difference between each z' for the experimental group males and the corresponding z' for the control group males was made. The assumption behind this test was that a reduction in the conflict between specific sex role stereotypes and the general philosophical equality scale should be reflected in an increased correlation between each of the bias scales and Scale 6. People should give answers to the bias statements that are more consistent with their responses to equality statements. The conclusion was generally supported because significant differences were found in three of the five comparisons.

In summary, the hypotheses were generally supported by the findings. The manual does result in changed attitudes as reflected by the instrument developed for use in the project. More work should be done on this instrument so that more diagnostic information can be provided to the respondents. The instrument does have two strong factors, as well as high internal consistency and good stability.

Additions to the manual could include more activities designed specifically to deal with stereotypes about males. The existing activities are heavily weighted toward female roles. While such a decision can be defended in view of the needs at this time, the suggested addition could provide a significant contribution to future literature.

CHAPTER V

RECOMMENDATIONS

The most important reason for attempting this research and development project was to provide materials which could help reduce the impact that sex role stereotyping has on secondary school students enrolled in nontraditional programs. The data demonstrate from that perspective that the project was successful. In addition, the products and process have been well received wherever they were used. Several participants have adapted the activities for use with students and parent groups.

Although the self-intervention strategies have proved successful, as shown by both quantitative and qualitative data, there are still several areas which are a concern or need additional work. These recommendations are highlighted in this chapter.

First, it is recommended that the survey be used only as an experimental tool or in conjunction with the manual as a self-confrontation device until further research on the factor structure is completed. The current instrument has both a bias factor and an equality factor, but it does not provide other diagnostic information. This lack of content factors may well be due to the early decision to select only strong "bias" and "nonbiased" statements. That decision set the bias threshold very low for most items. Perhaps more ambiguous, less transparent, items might yield better results in terms of providing more diagnostic scales.

Second, it is recommended that further research be conducted in which the manual is used with another survey as the measure of attitudes. Such a procedure could be accomplished easily with only minor changes in directions to the user in the section of the manual including the survey items. The manual seems to work well in modifying attitudes measured directly by the survey constructed for this research. If it could be shown that attitudes regarding sex role stereotypes measured by another instrument also were changed, the strategies would be an even larger contribution to the profession.

The third recommendation is that other activities related to sex role stereotypes about males be developed. The work completed for this project dealt primarily with the female role. Although several items in the survey dealt with the male stereotype, little of the content of the intervention strategies was designed to change attitudes about males in the work force. While this decision could be

defended in view of needs at this time, other activities should be added in the future.

As stated earlier, these materials were developed for use by vocational educators working with secondary school students. Although a very narrow target population was necessary for the management of this project, restrictive attitudes and behaviors associated with sex role stereotyping are not indigenous to vocational educators. The fourth recommendation is, therefore, that the self-assessment, self-confrontation, self-intervention model be adapted for use by parents, employers, and students themselves. It is recommended, further, that exercises for elementary school students be developed and tested so that many of the self-defeating behaviors employed often by secondary school youth will be replaced by other, more productive, attitudes and behaviors.

Finally, it is recommended that the model presented here be tested for other situations involving bias and prejudice. The ideas might be adapted, for example, for use in dealing with racial/ethnic bias.

The major constraint to the use of this process is that it is difficult to change attitudes unless the person is at least open to suggestion. That constraint applies, however, to most attitude management systems. As might be expected, materials are most effective with those who do not want their attitudes or behaviors (even subconsciously) to create barriers for another person choosing a career. The process may not work for many of those who are not at all open to such a possibility. There are two or three such examples in this study. The "bias" scores for two or three participants actually increased sharply on the posttest. This finding suggests that intervention may, on rare occasions, actually increase or confirm biases.

The concepts of self-assessment, self-confrontation, and self-intervention are intuitively appealing, as well as disarming. Project MASSIVE provides one process for implementing a part of the legislation designed to prohibit discrimination which has been in place for several years. Changing attitudes often involves change from within the individual. Legislation rarely accomplishes such a change.

Appendix A-Part 1

AD HOC COMMITTEE MEMBERS

Kenneth R. Higgins, Chairperson
Ad Hoc Committee Assistant Director
Division of Guidance and Testing
Ohio Department of Education

R.N. Adams
Superintendent
Upper Valley Joint Vocational School District

John Brown
Instructor, Home Economics
Cleveland West Technical High School

David Cliness, Chairperson and
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Youngstown State University

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Labor Relations Specialist
Fisher Body Division General Motors Corporation

Caroline Ohnsman
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Darrell L. Parks, Director
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Scioto County Joint Vocational School District

Brinson Terry
Associate Coordinator of Guidance Services
Cincinnati City Schools

Lucille E. Wright
Professor of Education (Business and Office)
Cleveland State University

Appendix A-Part 2

Oringinal Lists of Stereotypes

MALE STEREOTYPING

STUDENTS, TEACHERS, COUNSELORS, PRINCIPALS, PARENTS, PEERS AND CUSTOMERS TYPICALLY BELIEVE SOME OR ALL OF THE FOLLOWING SEX ROLE STEREOTYPING. THESE EXPECTATIONS AND BEHAVIORS CONTRIBUTE TO THE PROBLEM OF UNSUCCESSFUL MALE STUDENTS IN NON-TRADITIONAL VOCATIONAL EDUCATION PROGRAMS.

PHYSICAL ATTRIBUTES

- GAY
- HETEROSEXUAL
- COLOR BLIND
- NO STAMINA FOR STANDING
- FINGERS AND HANDS TOO BIG FOR DETAILED WORK
- PREFERS MORE ACTIVE ACTIVITIES
- "BEAUTIFUL PEOPLE SYNDROME"
  - TALL VS. SHORT
  - UGLY VS. BEAUTIFUL
  - SKINNY VS. FAT

EMOTIONAL/LIFESTYLE

- QUEER
- THINKS ABOUT SEX ALL THE TIME
- COMPETITIVE
- ABRASIVE LANGUAGE
- MESSY
- DOESN'T TRUST WOMEN AS FELLOW WORKERS
- SURE OF HIMSELF
- WILL MOVE ON QUICKLY TO BETTER HIMSELF
- INSENSITIVE
- "BEAUTIFUL PEOPLE SYNDROME" PART 2
  - APPROPRIATE SOCIAL LEVEL JOB

APTITUDE

POOR MANUAL DEXTERITY
POOR ARTISTIC ABILITY
TOO ROUGH IN WORKING ON WOMEN

ACADEMIC ABILITY

POOR IN READING
POOR IN EXPRESSION -- WRITTEN AND VERBAL

CONCEPTS OF THE WORLD OF WORK RELATED TO CLASSROOM PERFORMANCE

WANTS TO BE THE BOSS
DOESN'T LIKE TO WORK FOR A WOMAN
DOESN'T TREAT FELLOW WORKERS (WOMEN) AS EQUALS

FEMALE STEREOTYPING

STUDENTS, TEACHERS, COUNSELORS, PRINCIPALS, PARENTS, PEERS AND CUSTOMERS TYPICALLY BELIEVE SOME OR ALL OF THE FOLLOWING SEX ROLE STEREOTYPING. THESE EXPECTATIONS AND BEHAVIORS CONTRIBUTE TO THE PROBLEM OF UNSUCCESSFUL FEMALE STUDENTS IN NON-TRADITIONAL VOCATIONAL EDUCATION PROGRAMS.

PHYSICAL ATTRIBUTES

- DOESN'T LIKE TO GET DIRTY
- CONCERNED ABOUT PHYSICAL APPEARANCE
- CAN'T LIFT BECAUSE OF WEAK MUSCLES IN ARMS, LEGS AND BACK
- CAN'T WORK FOR SUSTAINED PERIODS OF TIME
- PREFERS PASSIVE ACTIVITIES
- "BEAUTIFUL PEOPLE SYNDROME"
  - TALL VS. SHORT
  - UGLY VS. BEAUTIFUL
  - SKINNY VS. FAT

EMOTIONAL/LIFESTYLE

- NO CONCEPT OF TEAM EFFORT
- PASSIVE
- SUBMISSIVE
- DEPENDENT
- NOT INQUISITIVE
- EXCITABLE
- SUSCEPTIBLE TO HURT FEELINGS
- LESS OBJECTIVE
- CAN'T TAKE CRITICISM
- FOLDS UNDER PRESSURE
- NOT PREPARED FOR LEADERSHIP ROLE OR RESPONSIBILITY
- WORRIES ABOUT MISTAKES
- UNSURE OF SELF
- CRIES EASILY
- "BEAUTIFUL PEOPLE SYNDROME" PART 2
  - APPROPRIATE SOCIAL LEVEL JOB

APTITUDE

POOR IN MECHANICS
POOR IN SPATIAL RELATIONS
NO CHILDHOOD PLAYING WITH CARS AND TOOLS
NO TEENAGE TINKERING WITH CARS AND TOOLS

ACADEMIC ABILITY

POOR IN SCIENCE
POOR IN MATH

CONCEPT OF WORLD OF WORK RELATED TO CLASSROOM PERFORMANCE

UNWILLING TO WORK OVERTIME
NOT LOOKING FOR VOCATION BUT AVOCATION
WILL QUIT WORK AFTER MARRIAGE TO HAVE CHILDREN
HIGH ABSENTEEISM
HIGH TURNOVER RATE
WILL MOVE TO HUSBAND'S NEW JOB LOCALE
INCOME IS FAMILY'S SECOND INCOME

Appendix A-Part 3
AD HOC COMMITTEE REACTIONS

NOVEMBER 5, 1977 NAME_____

1. Are any of the five major categories not necessary to encompass all restrictive sex-role stereotypes? If yes, which one(s)? Give rationale!

2. Are the five major categories sufficient to encompass all restrictive sex-role stereotypes? If not, list other major categories? Give rationale!

3. Is any specific sex-role stereotype classified in the wrong group? Which one(s)? For each, indicate the group with which it should be placed and your rationale.

4. Which specific sex-role stereotype should be deleted from the list? For each give your rationale.

5. Are there sex-role stereotypes which are missing from the list? List these: indicate a major category for each; and give your rationale for the inclusion of each.

6. Do you have any general recommendations for conducting our research?

7. Do you have any general recommendations for the development of our survey?

8. Do you have any specific suggestions concerning types of items which could be employed in our survey? (At present, we plan to use a five-point response scale from strongly agree to strongly disagree with the preferred response sometimes at one end and sometimes at the other.)

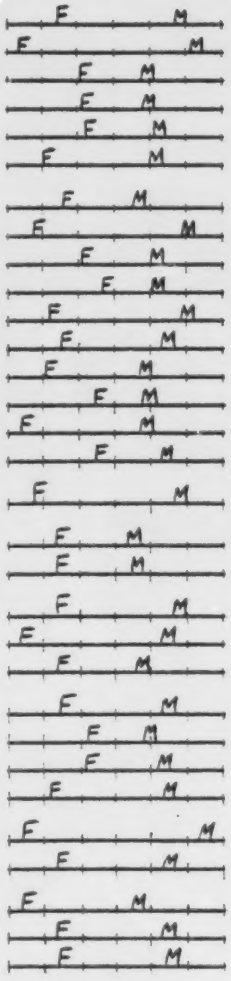
Appendix A-Part 4

Perceptions of Average and Ideal
Male and Female

AVERAGE

Identification: Circle your sex: M F

Directions: Place an M at that point on the continuum which describes your concept of the average male. Place an F at that point which you think describes the typical female. Think only in terms of the way typical men and women are - not the way they should be.



MASSIVE
1/5/78

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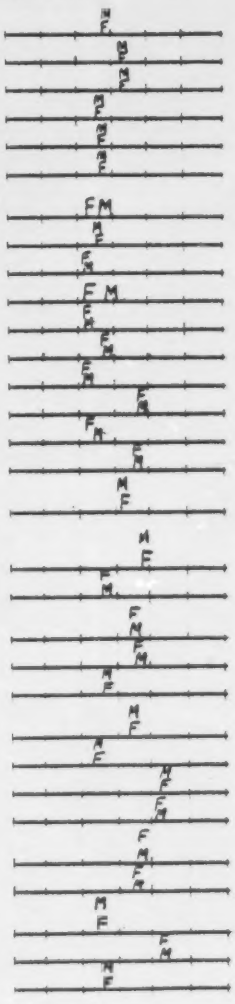
I
D
E
A
L

Identification: Circle your sex: M F

Directions: Place an M at that point on the continuum which describes your concept of the ideal male. Place an F at that point which you think describes the ideal female. Think only in terms of the way men and women *should* be - not the way they are.



indoorsy	outdoorsy
passive	active
weak	strong
dependent	independent
submissive	dominant
poor in mechanics	good in mechanics
poor in spatial relations	good in spatial relations
covert	overt
subtle	obvious
graceful	clumsy
well-behaved	boisterous
sensitive	insensitive
solicitous	uncaring
subjective	objective
emotional	unemotional
illogical	logical
good manual dexterity	poor manual dexterity
good artistic ability	poor artistic ability
imaginative	unimaginative
good in comm. skills	bad in comm. skills
afraid	courageous
unsure	confident
poor in science and math	good in science and math
follower	leader
avocation	vocation
unstable employee	stable employee
family's second income	family's first income
consumer	provider
concerned about appearance	unconcerned about appearance
education wasted	education necessary
talkative	silent

MASSIVE
1/5/78

Appendix A-Part 5

Summary of Ad Hoc Committee Tasks

An Overview of the Tasks
Ad Hoc Committee
for
Project MASSIVE

Saturday, November 5, 1977

1. Review a list of behaviors and attitudes related to sex stereotyping.

2. React to this list by making suggestions for adding, deleting or re-classifying behaviors and/or attitudes.

3. Identify those behaviors and attitudes which most appropriately represent sex stereotyping so that we can build a survey to measure them.

4. Determine the proper balance or weight that should be given to each behavior and attitude on the new survey.

Saturday, December 10, 1977

1. Review test items that have been written and classify them according to the various behaviors and attitudes that are to be measured.

2. Rate each item to determine where on a bias---non-bias continuum a given statement falls.

3. React to these items making suggestions for adding, deleting or re-classifying them. Make certain that each item fairly represents the particular behavior or attitude that it is to measure.

Saturday, May 13, 1978

1. Review a draft copy of the Intervention Manual and supporting materials.

2. React to this manual making suggestions for adding, deleting and modifying any part.

3. Determine how effectively this manual and its support materials do the following:

    a. uses a self-confrontation approach;
    b. points out discrepancies in teacher/counselor attitudes toward sex stereotyping;
    c. describes how these discrepancies reflect teacher/counselor behavior toward students;
    d. suggests remedial activities directly related to these discrepancies, and
    e. bases each self-confrontation exercise and remedial activity upon a cluster of items in the instrument.

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Appendix B

Project MASSIVE

Project Background:

Project MASSIVE (Modifying Attitudes of Sex Stereotypes in Vocational Education) was written by the Ohio Department of Education and funded by the U. S. Office of Education. This project addressed the problem of how teacher and counselor expectancies relating to sex role stereotyping might limit the success of vocational education students.

A self-assessment, self-improvement model will be employed to discover and eliminate sex role stereotyping. The self-assessment phase consists of the Project MASSIVE Survey while the self-improvement phase will be accomplished through use of an Intervention Manual.

Project MASSIVE Survey

General Purpose of the Survey:

The Project Massive Survey is a self-administered, self-scored instrument. It is designed for educators who are concerned that their actions and attitudes, either consciously or subconsciously, might limit student progress and achievement in nontraditional vocational programs. These programs are typically thought to be for one sex or the other.

The survey consists of 106 statements that were devised to uncover subtle sex stereotypes. After completing the survey, a self-scoring process will help each individual determine if sex bias exists and the nature of that bias. Items which measure identified bias will key the educator to the Intervention Manual. This manual will outline the extent of the bias and suggest methods that can be used to lessen the effects of that bias.

Specific Considerations for Responding to the Survey:

An honest open response to the survey reflecting your feelings is expected. The survey will be valuable to individuals who want it to be if they use the following guidelines:

. *DO* respond to each statement as you feel about it at the present time.

. *DO NOT* take too much time with any item (first impressions or feelings are preferred).

. *DO NOT* respond to the items as you think most people:

WOULD RESPOND,

SHOULD RESPOND, or

ARE EXPECTING YOU TO RESPOND.

Responding to the Items on the Survey:

Respond to all items in one of five ways. Fill in the circles with a number 2½ or softer pencil as follows:

A = Strongly Disagree

B = Agree

C = Neutral

D = Disagree

E = Strongly Disagree

Project MASSIVE Survey

Item No.		
1.	Outdoor jobs should be performed by men.	
2.	Men handle active jobs better than women.	
3.	As many women as men have the physical strength necessary to operate heavy equipment.	
4.	An equal number of women and men prefer to let others make important decisions.	
5.	Important decisions should be made by men.	
6.	Women generally have as much mechanical ability as men.	
7.	Women operate best behind the scenes.	
8.	Men, unlike women, generally operate in an open, honest manner.	
9.	Men are unsuited for some jobs because they are too clumsy.	
10.	Women employees are no more well behaved than are men.	
11.	As a rule, women make better counselors than men because they empathize better.	
12.	When all other things are about equal between two candidates except sex, the member of the minority sex should be hired.	
13.	Women are no more sympathetic to those with pain than are men.	
14.	Girls generally act out their emotions more than boys.	
15.	Decisions made by women are seldom based on sound logic.	

Item No.		
16.	Women generally perform better than men in cosmetology or dental hygiene because women have better finger coordination.	
17.	Females are better than males in reading and communication skills all through school and life.	
18.	Women as well as men should be prepared to support themselves and their families financially.	
19.	Women are no more subjective than men.	
20.	Women care more about the feelings of others than do men.	
21.	The husband, as well as the wife, should be willing to leave his job to follow the spouse's job.	
22.	Women are no more whimsical than men.	
23.	In job-related circumstances, men are as uncertain of themselves as women.	
24.	All jobs should be open to both men and women.	
25.	Boys are smarter than girls in science and math as proved by comparing their test scores.	
26.	Women in the work force prefer a subordinate role more so than men.	
27.	Men and women have almost no inborn differences in intellectual capabilities.	
28.	Married women work to keep from being bored at home.	
29.	There is nothing wrong with a husband's staying home to care for their children while the wife works.	
30.	Money spent educating a man or woman is money well spent.	

Item No.		
31.	Jobs requiring skills in caring for other people are performed best by women.	
32.	Women are naturally better at interior decoration than men.	
33.	Men have fewer original ideas than women.	
34.	Women like to gossip and exchange recipes.	
35.	Women cost their companies more than men because of a higher turnover and absenteeism rate.	
36.	About an equal percentage of man and women prefer working outdoors.	
37.	Successful women are no more assertive than equally successful men.	
38.	Women have more endurance than men.	
39.	Women are generally too dependent on others to handle top administrative jobs.	
40.	Men are by nature no more dominant than women.	
41.	Employers prefer to hire men for jobs requiring mechanical ability.	
42.	Few architects are women because they typically do not have enough spatial ability.	
43.	Women hide their opinions no more than men.	
44.	Men relate to others in a more direct way than women.	
45.	Men are naturally insensitive to others.	
46.	Jobs such as loading or unloading trucks can be managed only by males.	

Item No.		
47.	Successful men and women in business are equally "pushy."	
48.	If a male and female candidate have about the same qualifications for a high school principalship, the male should get the job.	
49.	Men usually do not care when others are hurt.	
50.	Women's decisions are no more governed by emotion than are those of men.	
51.	Since men are less emotional than women, they are more logical.	
52.	Men and women generally perform about the same at electronics work because both have about the same finger dexterity.	
53.	Men should expect to bear the major responsibility for supporting a wife and family.	
54.	Men, unlike women, usually evaluate all of the facts before making a decision.	
55.	When under stress, men are equally as emotional as women.	
56.	Standards for promotion and hiring should be the same for men and women.	
57.	Women think before they act as often as men.	
58.	To work effectively women need more encouragement and approval than men.	
59.	Because men and women have basic psychological differences, they are suited to fill different roles.	
60.	Boys do not necessarily make better chemists or mathematicians than girls.	

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Item No.		
61.	A wife's job and career are as important to the family as the husband's.	
62.	Women and men have almost no inborn emotional differences.	
63.	Usually women work only for spending money, while men work to support families.	
64.	Men and women should share the responsibility of raising children.	
65.	Boys are as concerned about their appearances as girls.	
66.	Jobs requiring skills in making high level administrative decisions are performed best by men.	
67.	Women typically have no more artistic ability than men.	
68.	Men and women are equally innovative.	
69.	The best authority figure in our society is a strong, silent man.	
70.	Women have proven themselves to be as dependable as workers as men.	
71.	Women who work generally prefer passive jobs.	
72.	Few jobs require physical strength greater than that of the average woman.	
73.	Women prefer to rely upon others to make important decisions.	
74.	Women are generally content to give in to males.	
75.	Women usually cannot perform jobs requiring much mechanical aptitude.	

Item No.		
76.	The average female has about the same spatial ability as the average male.	
77.	Women are usually more underhanded than men.	
78.	Women respond no more subtly than men.	
79.	Graceful men often appear effeminate.	
80.	Women are better suited for some jobs because they are less boisterous than men.	
81.	The typical female worker is about as sensitive to others as the typical male.	
82.	People typically prefer to work for a male than for a female.	
83.	Schools should encourage boys and girls to consider jobs which traditionally were associated with the opposite sex.	
84.	Men make good nurses because they have an awareness of and sensitivity to others.	
85.	When under stress, women are naturally more emotional than men.	
86.	Jobs requiring logical thinking could be filled equally well by men or women.	
87.	Men are harder to place as typists because they generally do not perform as well as women.	
88.	Men, not women, are known as the doers and providers.	
89.	On the whole, women tend to have more "common sense" than men.	
90.	Jobs with lots of stress should be filled by men.	

Item No.		
91.	Men and women should be paid the same for equivalent work.	
92.	Women have no more unrealistic fears than do men.	
93.	Women need to be told they are doing a good job.	
94.	There are certain jobs and roles which only men should have and the same is true for women.	
95.	As many men as women prefer to take directions, not give them.	
96.	After marriage, women should quit work to devote themselves to their husbands and families.	
97.	There are few things on any job that men can do better than women or vice versa.	
98.	Women, as often as men, work because they need money to help support their families.	
99.	Women should expect to use and enjoy the fruits of men's labors.	
100.	Girls don't like to get dirty because they are concerned about their images.	
101.	Women are typically more imaginative than men.	
102.	Boys can do just as well as girls in jobs requiring skills in English or foreign languages.	
103.	Men should perform jobs likely to require courage.	
104.	Women are no more gossipy than men.	
105.	Men tend to have a poorer attitude and lower rate of productivity than women on the same jobs.	
106.	The time and money spent on training women for high level jobs are largely wasted.	

Item No.		
107.	The directions for completing the survey were clear.	
108.	I responded to all items in an open honest way.	
109.	The time I spent on this survey was worth it.	
110.	This survey could help teachers and counselors lessen sex bias in themselves.	
111.	Most examples of sex bias were covered by the survey.	
112.	I am interested in seeing the Intervention Manual.	
113.	When the survey and Intervention Manual are completed, I would like to assess my level of sex bias.	
114.	If I do have some sex bias, I would like to use the Intervention Manual to lessen that bias within myself.	

Appendix B-Part 2

Project MASSIVE

Field Test Directions

Directions for participants in Field Test: Thank you for agreeing to participate in the Field Test phase of Project MASSIVE. We are testing the effectiveness of our survey and intervention manual designed for use in assessing and modifying sex role stereotypes. Please follow explicitly the order below. Any irregularity could invalidate our results.

Step 1. Record your responses to the 60 item survey on an answer sheet. Mark 1 on that answer sheet and print your name so we can match up results.

Step 2. Complete the intervention manual using your responses to the survey as directed in the manual.

Step 3. Write any suggestions you wish on the survey or manual.

Step 4. Put the 1st answer sheet and manual in the envelope.

Step 5. On another day (preferably) take the 60 - item survey a second time. Mark your answer sheet with a 2. Be sure to put your name on this sheet.

Step 6. Put the second answer sheet in the envelope together with any comments or suggestions.

Step 7. Return to person leading workshop.

ERT 6/22/78

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Self - Administered Survey of
Sex Stereotypes
(SASSS)

Code:

A = Strongly Agree (SA)
B = Agree (A)
C = Neutral (N)
D = Disagree (D)
E = Strongly Disagree (SD)

Item No.	Item
1	Outdoor jobs should be performed by men.
2	Men handle active jobs better than women.
3	Important decisions should be made by men.
4	Women operate best behind the scenes.
5	Men, unlike women, generally operate in an open, honest manner.
6	As a rule, women make better counselors than men because they empathize better.
7	Decisions made by women are seldom based on sound logic.
8	Women generally perform better than men in cosmetology or dental hygiene because women have better finger coordination.
9	Women as well as men should be prepared to support their families financially.
10	Women care more about the feelings of others than do men.
11	All jobs should be open to both men and women.
12	Boys are smarter than girls in science and math as proved by comparing their test scores.
13	Women in the work force prefer a subordinate role more so than men.
14	Married women work to keep from being bored at home.
15	Money spent educating either a man or a woman is money well spent.
16	Jobs requiring skills in caring for other people are performed best by women.
17	Women are naturally better at interior decoration than men.
18	Men have fewer original ideas than women.
19	Women like to gossip more than men.
20	Women cost their companies more than men because of a higher turnover and absenteeism rate.

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Self - Administered Survey of
Sex Stereotypes
(SASSS)

Code:

A = Strongly Agree	(SA)
B = Agree	(A)
C = Neutral	(N)
D = Disagree	(D)
E = Strongly Disagree	(SD)

	Item No.	Item
	21	Women are generally too dependent on others to handle top administrative jobs.
	22	Few architects are women because they do not have enough spatial ability.
	23	Men relate to others in a more direct way than women.
	24	Men are naturally insensitive to others.
	25	Jobs such as loading or unloading trucks can be managed only by males.
	26	If a male and female candidate have about the same qualifications for a high school principalship, the male should get the job.
	27	Men usually do not care when others are hurt.
	28	Since they are less emotional than women, men are more objective.
	29	Men should expect to bear the major responsibility for supporting a wife and family.
	30	Men, more than women, evaluate all of the facts before making a decision.
	31	Standards for promotion and hiring should be the same for men and women.
	32	To work effectively women need more encouragement and approval than men.
	33	Because men and women have basic psychological differences, they are suited to fill different roles.
	34	Men are better chemists or mathematicians than women.
	35	A wife's career is not as important to the family as her husband's.
	36	Usually women work only for spending money, while men work to support families.
	37	Men and women should share the responsibility of rearing children.

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Self - Administered Survey of
Sex Stereotypes
(SASSS)

Codes:

A = Strongly Agree	(SA)
B = Agree	(A)
C = Neutral	(N)
D = Disagree	(D)
E = Strongly Disagree	(SD)

	Item No.	Item
	38	Jobs requiring skills in making high level administrative decisions are performed best by men.
	39	Men make better authority figures than women.
	40	Men are more dependable than women.
	41	Women who work generally prefer passive jobs.
	42	Women prefer to rely upon others to make important decisions.
	43	Women are generally content to give in to males.
	44	Women usually cannot perform jobs requiring much mechanical aptitude.
	45	Women are usually more underhanded than men.
	46	People typically prefer to work for a male than for a female.
	47	When under stress, women are naturally more emotional than men.
	48	Jobs requiring logical thinking are often filled by men.
	49	Men are harder to place as typists because they generally do not perform as well as women.
	50	Men, more than women, are doers and providers.
	51	Stressful jobs should be filled by men rather than women.
	52	Men and women should be paid the same for equivalent work.
	53	There are certain jobs and roles which only men should have and the same is true for women.
	54	Women, more than men, prefer to take directions, not give them.
	55	After marriage, women should quit work to devote themselves to their husbands and families.
	56	Women should expect to use and enjoy the fruits of men's labors.
	57	Because they are more concerned about their appearance than men, women don't like to get dirty.
	58	Women are typically more imaginative than men.

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	Item No.	Item
	59	Men rather than women should perform jobs likely to require courage.
	60	The time and money spent on training women for high level jobs are largely wasted.

Appendixes C-H were
Removed due to Illegibility.

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